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FOURTH ANNUAL REPORT

OF THE

REGENTS OF THE UNIVERSITY,

ON THE

Condition of the State Cabinet



OF

NATURAL HISTORY,

AND THE

HISTORICAL AND ANTIQUARIAN COLLECTION.

ANNEXED THERETO.

---

Made to the Senate, January 14, 1851.

---

ALBANY:

CHARLES VAN BENTHUYSEN, PRINTER TO THE LEGISLATURE,

407 Broadway.

.....  
1851.







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1851.





# State of New-York.

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No. 30.

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IN SENATE, JAN. 14, 1851.

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## FOURTH ANNUAL REPORT

Of the Regents of the University, on the condition of the State Cabinet of Natural History, and the Historical and Antiquarian Collection annexed thereto.

TO THE HON. SANFORD E. CHURCH,

*President of the Senate :*

SIR—I have the honor to transmit the Annual Report of the Regents of the University on the State Cabinet of Natural History, and on the Historical and Antiquarian Collection annexed thereto.

I am, very respectfully,

Your obedient servant,

G. Y. LANSING,

*Chancellor.*



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## REGENTS OF THE UNIVERSITY.

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WASHINGTON HUNT, Governor, *ex officio*.  
SANFORD E. CHURCH, Lieut. Governor, *ex officio*.  
CHRISTOPHER MORGAN, Secretary of State, *ex officio*.  
GERRIT Y. LANSING, Chancellor.  
JOHN GREIG, Vice Chancellor.  
GULIAN C. VERPLANCK, LL. D.  
JOHN K. PAIGE.  
ERASTUS CORNING.  
PROSPER M. WETMORE.  
JOHN L. GRAHAM.  
JOHN MCLEAN.  
GIDEON HAWLEY, LL. D.  
DAVID BUEL.  
JAMES S. WADSWORTH.  
JOHN V. L. PRUYN.  
JABEZ D. HAMMOND, LL. D.  
JOHN L. O'SULLIVAN.  
ROBERT CAMPBELL.  
REV. SAMUEL LUCKEY, D. D.  
ROBERT G. RANKIN.  
PHILIP S. VAN RENSSELAER.  
(One vacancy.)

T. ROMEYN BECK, Secretary.

JOHN GEBHARD, Jr.,  
Curator of the "State Cabinet of Natural History."





STANDING COMMITTEE OF THE REGENTS

*Specially charged with the care of the State Cabinet.*

1850.

HAMILTON FISH, Governor.

CHRISTOPHER MORGAN, Secretary of State.

ERASTUS CORNING.

JOHN V. L. PRUYN.

ROBERT G. RANKIN.





# REPORT.

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TO THE LEGISLATURE OF THE STATE OF NEW-YORK.

The Regents of the University

RESPECTFULLY REPORT :

That the various Departments in the State Cabinet have been greatly enlarged during the year that has just expired. It was stated in the last report that many of the Zoological specimens were found to be injured by the moth. A further examination showed the necessity of destroying several, so as, if possible, completely to check the ravages of this destructive insect. Mr. Hurst, the taxidermist, was at the same time directed to replace such as were thus lost to the collection, and also to supply other deficiencies that were still existing. The purchases made on this account will be noticed in the list of articles added.

While the attention of the Board was thus directed, they received a communication from the parents and uncle of the late Mr. De Rham, (the donation of whose minerals, fossils and shells are noticed in the last report,) in which they tendered for the acceptance of the Regents, and through them, for the State, the valuable and splendid collection of birds and other animals made by this gentleman during his life time. This memorial of his ardor and research in the science of natural history, accumulated at an expense of many thousand dollars, and embracing some of the rarest and most valuable specimens, had remained secluded since the period of his lamented decease. It was now only yielded that it might receive a permanent abiding place in the Museum of the State.



Mr. Hurst was directed to repair to New-York and take charge of the collection. On its arrival here its contents were examined and ascertained. The number of animals and birds that will be preserved amounts to upwards of three hundred, and by far the greater part of these are native to our State and country. Of these last, the Regents will only specify the golden eagle, one of the rarest of our birds, and not previously in the Museum, while of the foreign ones, it is sufficient to name the condor of Mexico and the silver pheasant of China. It is only, however, by a personal examination that the variety and importance of these specimens can be appreciated, and the Regents have great reason to be satisfied with the industry and skill displayed by Mr. Hurst, in preserving and arranging them.

Indeed the committee of the Board having this matter specially in charge, have found it imperatively necessary to engage his permanent services, in order to maintain the Zoological department in its present high state of preservation. They have agreed on the sum of two hundred dollars per annum for this purpose, to commence with the first of September last, and they trust that this measure of precaution will meet with the sanction of the Legislature.

In compliance with an arrangement, of some years' standing, with Dr. Fitch of Washington county, that gentleman has added about 300 specimens, belonging to a particular division of insects and native to our State. They are arranged and named, and a catalogue, prepared by Dr. Fitch, accompanies this report.

The Regents may here observe that they have received repeated applications during the last year, to purchase collections in zoology and mineralogy, made within our own borders, but they have been obliged to decline them, in consequence of the means placed at their disposal.

Donations of value have also been received for the Mineralogical and Geological departments, and of these, it will be seen that the specimens presented by Dr. Hough, of St. Lawrence county, are interesting from the illustrations they offer of the mineral wealth of the northern part of the State.

## HISTORICAL AND ANTIQUARIAN COLLECTION.

Mr. Lewis H. Morgan, of Rochester, whose report with its illustrations, in the last annual communication of the Regents, has excited such deserved attention, urged upon the Regents, at an early period of the last year, another appropriation for increasing the specimens of Indian manufactures already in the cabinet. The sum of two hundred and fifty dollars was accordingly placed in his hands, and on this there have been received an Indian bark house and a large Indian canoe. The remainder of the articles obtained, are understood at the date of this report to be on their way to this city.

Mr. Morgan, also, promises an additional report on the above, and if received in season, it will be transmitted to the Legislature.

At his instance, also, the Regents were induced to purchase from Mr. Ely S. Parker, an Indian and an engineer in the service of the State, the tomahawk of the once renowned chieftain Cornplanter. The authenticity of this relic is established in an interesting letter from Mr. Parker, a copy of which is herewith transmitted.

It is only necessary to glance over the catalogue of donations to this collection, to be assured of the great interest taken in it, both by strangers and by our fellow citizens.

Dr. Hough has communicated a paper entitled "Notices of Ancient remains of Art in Jefferson and St. Lawrence counties, with illustrations of the same," in continuation of his paper published last year. The Regents recommend its printing with the present report, and they, also, transmit an analysis, by Dr. Salisbury, of a hæmatitic iron ore found in Westchester county.

With the above detail of the proceedings of the committee, charged with the care of the State Cabinet, the Board might be content to close their annual report, were they not deeply impressed with the necessity of obtaining more ample means for the preservation and increase of the "State Cabinet," and thus extending its benefits to the tens of thousands, who, as in the



last year, may be expected during the present, as its welcome visitors. An appropriation of two hundred and fifty dollars for the year 1851, is the sole amount now at the disposal of the Regents. This should be increased to at least one thousand dollars for the present and the next year. Again, every available foot of ground for the proper disposition of the collection is occupied and the Board have hence received, with great pleasure, an official notice that the Commissioners of the Land Office and the New-York State Agricultural Society will present to the Legislature, plans for increasing the building now devoted to the best interests of science and the arts, in a manner commensurate with the dignity and the high destinies of the State.

It is an unpleasant, but a necessary duty to add, that on an application from the local committee of New-York, appointed to forward objects of interest, both natural and artificial, to the approaching exhibition in London, some doubts were thrown out whether the State possessed a collection of fossil remains in its own right. This matter will, however, be brought before the Legislature by another commission, and the Regents, therefore, content themselves with the statement of the circumstance, and, also, that Professor Hall has promised to furnish a catalogue of the fossils, now the property of the State, so far as they are described in the 1st and 2nd volumes of his *Paleontology*.

This, at whatever time it may be received, will be transmitted to the Legislature.

It has been further suggested, and the idea seems to be gaining favor, that the specimens of Indian manufactures, now in the collection, and those which are presently expected, should under the care of a watchful guardian, be dispatched to this Exhibition, so remarkable, even if its least sanguine auguries are accomplished. But the Regents have not the means, nor the power, to further such a plan, and it will remain with the Legislature, alone, to sanction it with their necessary assent.

By order of the Regents,

G. Y. LANSING, *Chancellor*.

T. ROMEYN BECK, *Secretary*.

*Papers accompanying this Report.*

- A. Account current of receipts and expenditures, 1850.
- B. Catalogue of the Quadrapeds, Birds, Reptiles, Amphibians, Fishes, &c., added to the State Cabinet from January 1, 1850, to January 1, 1851.

In this will be found a list of the collection of the late Mr. De Rham, so far as the same has been named and arranged.

- C. Catalogue of Insects added to the State Cabinet of Natural History, December, 1850. By Asa Fitch, M. D.
- D. Donations to the Botanical Collection.
- E. List of Minerals, Geological specimens and Fossils, added from January 1st, 1850, to January 1st, 1851.
- F. Additions to the Historical and Antiquarian collection, by donation and purchase, from January 1st, 1850, to January 1st, 1851.
- G. Letters of Mr. Ely S. Parker, concerning Cornplanter's Tomahawk.
- H. Notices of ancient remains of art in Jefferson and St. Lawrence counties, by Franklin B. Hough, M. D.
- I. Analysis of a specimen of a Hæmatitic iron ore, by James H. Salisbury, M. D., Chemist to the New-York State Agricultural Society.

- K. References to various writings, relating to the NATURAL HISTORY OF NEW-YORK, that have appeared during the year.

Received since the adoption of the report by the standing committee, but previous to its presentation to the Regents.

- L. Catalogue of specimens of the Rocks and Fossils in the Gray Sandstone, Medina Sandstone, Clinton Group, Niagara Group, Onondaga Salt Group, and a part of the Water Lime Group; being a continuation of the Catalogue of the State Geological Collection, as far as the Fossils are named and described, by James Hall.

( A. )

*The Regents of the University, in account current with the appropriations towards preserving and increasing the "State Cabinet of Natural History," and the Historical and Antiquarian Collection, annexed thereto, and for defraying the incidental expenses of the same.*

To balance from previous account (see Senate Dec. 1850,  
No. 75, p. 15), ..... \$98 13  
1850.

Jany. 2 To cash received from the Comptroller, being  
the annual appropriation for 1850, ..... 250 00

April 13 To cash received from the Comptroller, being  
the special appropriation for the increase  
of the cabinet, and the payment of contin-  
gent expenses, ..... 500 00

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\$848 13

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1850. CR.

Jany. 8 By cash paid Jas. Henry, stationery for 1849,  
including two folio volumes, for recording  
donations and the names of visitors, No. 1, 14 32

By cash paid Lewis H. Morgan, expenses  
of travelling and other contingencies in the  
collection and arrangement of the Indian  
collection, No. 2, ..... 18 00

Jany. 9 By cash paid J. A. Hurst, for a preserved  
Buck and sundry birds, No. 3, ..... 73 00

Jany. 18. By cash paid J. A. Hurst for 21 days work at  
the cabinet, clearing out the moth, with  
sundries for the same, No. 4, ..... 65 50

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Am't carried forward, ..... \$



	Amount brought forward, .....	\$	
March 8	By cash paid Wm Boardman for sundry erec- tions and repairs at the State Cabinet, No. 5,	10 89	
Mar. 19	By cash paid J. A. Hurst, for a collection of preserved animals, birds and fishes, princi- pally to supply deficiencies occasioned by destruction from the moth, No. 6, .....	159 25	
Apr. 12	By cash paid John Gebhard, for contingent expenses and purchases, No. 7, .....	5 72	
Apr. 27	By cash paid Ely S. Parker for the tomahawk formerly belonging to Cornplanter, No. 8,..	20 00	
June 4	By cash paid J. A. Hurst, for a pre- served silver eel, .....	14 00	
	for a preserved Buffalo pike, ....	10 00	
	For expenses going to New-York, packing and transporting to Alba- ny the De Rham collection of birds, No. 9, .....	53 37	
		<hr/>	77 37
June 4	By cash paid John Gebhard for contingent expenses and purchases, No. 10, .....	4 80	
June 17	By cash paid Lewis H. Morgan, advance, to purchase indian manufactures, No. 11, ....	250 00	
July 3	By cash paid railroad company for transpor- tation of Indian canoe and house, No. 12,..	8 70	
Sept. 2	By cash paid Wells & Co., transportation of Dr. Hough's donation, and other contingent expenses, No. 13, .....	5 80	
Sept. 6	By cash J. A. Hurst, for sundry preserved ani- mals and birds, No. 14, .....	64 50	
Dec. 18	By cash paid Jno. Gebhard for various pur- chases and contingent expenses, No. 15, ...	6 12	
Dec 18	By cash paid James Henry's acct. for station- ery during 1850, No. 16, .....	8 65	
		<hr/>	\$792 62
	By balance to new account, .....	55 51	
		<hr/>	\$848 13
		<hr/>	

( Copy. )

ALBANY CITY BANK, Dec., 28, 1850.

I certify that there is the sum of fifty-five dollars and fifty-one cents standing to the credit of the "State Cabinet of Natural History" in the books of this bank.

( Signed )      JNO. T. MARSHALL,  
*Book-keeper*

We have examined the foregoing account and believe it to be correct, having compared the same with the vouchers.

*Albany, Dec. 30, 1850.*      HAMILTON FISH,  
ERASTUS CORNING,  
CHRISTOPHER MORGAN.

( B. )

CATALOGUE

OF THE

QUADRUPEDS, BIRDS, REPTILES, AMPHIBIANS, &c.,

ADDED TO THE

State Cabinet of Natural History,

(Including the Collection of the late H. Casimir De Rham, Jr.)

FROM JAN. 1, 1850, TO JAN. 1, 1851.



CATALOGUE

OF THE LIBRARY OF THE

Smithsonian Institution

(Including the Collection of the late H. H. Johnston, Jr.)

FROM JAN. 1, 1850, TO JAN. 1, 1881.

# MAMMALIA.

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## ORDER CARNIVORA.

### FAMILY SORECIDÆ.

ZOOLOGY—Part I.

SCALOPS AQUATICUS, Common Shrew Mole, - - - - p. 15

Presented by Theodore Teed, of Croton, Westchester county.

### FAMILY FELIDÆ.

LYNCUS BOREALIS, The Northern Lynx, - - - - - 50

This specimen was captured in Delaware county, New-York.

## ORDER RODENTIA.

### FAMILY SCIURIDÆ.

SCIURUS HUDSONICUS, The Red Squirrel, (male & female,) - 61

PTEROMYS VOLUCELLA, The Small American Flying Squirrel, 65

### FAMILY HYSTRICIDÆ.

HYSTRIX HUDSONIUS, The North American Porcupine, - - 77

HYSTRIX HUDSONIUS, Skeleton of the North American Porcupine.

Presented by Prof. James Hall.

## ORDER UNGULATA.

### FAMILY CERVIDÆ.

CERVUS VIRGINIANUS, The American Deer, (buck,) - - - 113

# BIRDS.

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## ORDER ACCIPITRES.

### FAMILY FALCONIDÆ.

ZOOLOGY—Part II.

BUTEO PENNSYLVANICUS, The Broad-winged Buzzard, (m.)	11
FALCO SPARVERIUS, American Sparrow Hawk, (male & f.)	16
ASTUR ATRICAPILLUS, American Goshawk, (female,) - -	19

### FAMILY STRIGIDÆ.

SURNIA NYCTEA, Snow Owl, (male and female,) - - - -	22
BUBO ASIO, Little Screech Owl, (male,) - - - - -	25
SYRNIUM CINEREUM, Great Grey Owl, (male,) - - - -	26
OTUS PALUSTRIS, Short-eared Owl, (male,) - - - - -	28
ULULA NEBULOSA, Barred Owl, (male,) - - - - -	29

## ORDER PASSERES.

### FAMILY AMPELIDÆ.

BOMBYCILLA CAROLINENSIS, Cedarbird, (male and female,) -	44
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### FAMILY ALCEDINIDÆ.

ALCEDO ALCYON, Belted Kingfisher, (female,) - - - -	45
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### FAMILY MERULIDÆ.

ORPHEUS CAROLINENSIS, Catbird, (male,) - - - - -	69
MERULA MIGRATORIA, American Robin, (female,) - - .	70
MERULA OLIVACEA, Olive-backed Thrush, (male,) - - -	73

### FAMILY MUSCICAPIDÆ.

MUSCICAPA RUTICILLA, American Redstart, (female,) - -	111
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## FAMILY CORVIDÆ.

GARRULUS CRISTATUS, Blue Jay, (male,) - - - - -	129
CORVUS AMERICANUS, Common Crow, (male,) - - - - -	132

## FAMILY QUISCALIDÆ.

QUISCALUS VERSICOLOR, Common Crow Blackbird, (male,) - - - - -	136
QUISCALUS FERRUGINEUS, Rusty Crow Blackbird, (m. & f.) - - - - -	137
STURNELLA LUDOVICIANA, Meadow Lark, (male and fem.) - - - - -	138
ICTERUS BALTIMORE, Golden Oriole, (male,) - - - - -	139
ICTERUS PHŒNICEUS, Red-winged Oriole, (male,) - - - - -	141
MOLOTHRUS PECORIS, Cow Bunting, (male and female,) - - - - -	143
DOLICHONYX ORYZIVORUS, Boblink, (male,) - - - - -	144

## FAMILY FRINGILLIDÆ.

STRUTHUS HYEMALIS, Snowbird, (male,) - - - - -	147
FRINGILLA ILIACA, Fox-colored Sparrow, (male,) - - - - -	149
LOXIA LEUCOPTERA, White-winged Crossbill, (male,) - - - - -	183

## FAMILY PICIDÆ.

PICUS PILEATUS, Crested Woodpecker, (m. & f.) - - - - -	184
PICUS VILLOSUS, Hairy Woodpecker, (male,) - - - - -	186
PICUS PUBESCENS, Downy Woodpecker, (m. & f.) - - - - -	187
PICUS ARCTICUS, Arctic Woodpecker, (male,) - - - - -	190
PICUS AURATUS, Golden-winged Woodpecker, (m. & f.) - - - - -	192

## FAMILY CUCULIDÆ.

COCCYZUS ERYTHROPHthalmus, Black-billed Cuckoo, (male,) - - - - -	195
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## FAMILY COLUMBIDÆ.

ECTOPISTES MIGRATORIA, Wild Pigeon, (m. & f.) - - - - -	196
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## ORDER GALLINÆ.

## FAMILY TETRAONIDÆ.

ORTYX VIRGINIANA, American Quail, (female,) - - - - -	202
TETRAO CUPIDO, Pinnated Grouse, (male,) - - - - -	205

## ORDER GRALLÆ.

## FAMILY CHARADRIDÆ.

CHARADRIUS VOCIFERUS, Kildeer Plover, (female,) - - -	212
CHARADRIUS VIRGINIACUS, Golden Plover, (female,) - - -	213

## FAMILY SCOLOPACIDÆ.

TOTANUS MACULARIUS, Spotted Sand-lark, (m. & f.) - - -	246
TOTANUS FLAVIPES, Yellow-legs, (male,) - - - - -	248
TOTANUS CHLOROPYGIUS, Solitary Tatler, (female,) - - -	249
SCOLOPAX WILSONI, Common American Snipe, (female,) -	256

## FAMILY RALLIDÆ.

ORTYGOMETRA CAROLINA, Sora Rail, (female,) - - - -	262
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## ORDER LOBIPEDES.

## FAMILY PODICIPIDÆ.

FULICA AMERICANA, American Coot, (male,) - - - - -	272
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## ORDER NATATOIRES.

## FAMILY LARIDÆ.

LARUS ZONORHYNCHUS, Common American Gull, (female,) -	308
LARUS BONAPARTII, Bonaparte's Gull, (male,) - - - - -	311

## FAMILY ANATIDÆ.

MERGUS MERGANSER, Buff-breasted Sheldrake, (female,) -	318
MERGUS CUCULATUS, Hooded Sheldrake, (female,) - - -	320
FULIGULA GLACIALIS, Old-wife or Squaw Duck, (male,) -	328
FULIGULA GLACIALIS, Old-wife, (summer dress,) (m. & f.) -	328
FULIGULA ALBEOLA, Buffle-headed Duck, (male,) - - -	329
FULIGULA CLANGULA, Whistler Duck, (male,) - - - - -	330
ANAS SPONSA, Wood Duck, (male,) - - - - -	338
ANAS DISCORS, Blue-winged Teal, (male,) - - - - -	339
ANAS CAROLINENSIS, Green-winged Teal, (male,) - - -	340
ANAS ACUTA, Pin-tail Duck, (m. & f.) - - - - -	341

*From Charles Martin, U. S. Navy.*

Eggs of two species of Birds, from the Amazon  
River 80 or 90 miles above Para, a city of  
Brazil.

# REPTILES.

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## ORDER I. TESTUDINATA.

### FAMILY CHELONIDÆ.

ZOOLOGY—Part III.

CHELONURA SERPENTINA, The Snapping Turtle, (m. & f.)	p. 8
EMYS TERRAPIN, The Smooth Terrapin, - - - - -	11
Presented by John McMichael, of Albany.	
EMYS PICTA, The Painted Tortoise, - - - - -	12
CISTUDA CAROLINA, Common Box Tortoise, - - - - -	24
Presented by Lawrence R. Vrooman, of Albany.	

## ORDER III. OPHIDIA.

### FAMILY COLUBERIDÆ.

COLUBER CONSTRICTOR, The Black-snake, - - - - -	p. 35
COLUBER ALLEGHANIENSIS, Pilot Black-snake, - - - - -	36
COLUBER EXIMIUS, The Milk-snake, - - - - -	38
COLUBER OCCIPITOMACULATUS. (Storer, Mass. Rep. p. 230.)	41

Two specimens, presented by Asa Fitch, of Salem, Washington County. DeKay describes this COLUBER as extra-limited. But the two specimens obtained by Dr. Fitch, in Salem, in this State, authorizes us to place this in the Catalogue of New-York Reptiles.

TROPIDONOTUS DEKAYI, The Small Brown-snake. . . . .	46
HETERODON PLATYRHINOS, Hog-nosed-snake. - - - - -	51

### FAMILY CROTALIDÆ.

CROTALUS DURISSUS, Northern Rattle-snake. - - - - -	55
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Five specimens taken near Lake George, and presented by Joshua Talford Blanchard, of Saratoga Springs.



# AMPHIBIA.

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## FAMILY RANIDÆ.

Zoology—Part III.

**RANA PIPIENS**, The Bull-frog, (large,) - - - - - p. 60

**RANA PIPIENS**, The Bull-frog, (large,) - - - - - 60

This specimen was taken at Greenbush, and presented by B. B. Kirtland.

**BUFO AMERICANUS**, Common American Toad. - - - - - 66

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# FISHES.

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## ORDER I. SPINE-RAYED.

### FAMILY TRIGLIDÆ.

Zoology—Part V.

**PRIONOTUS LINEATUS**, Banded Gurnard, - - - - - p. 45

Presented by Elijah Simmons of Albany.

## ORDER II. ABDOMINAL.

### FAMILY SALMONIDÆ.

**SALMO FONTINALIS**, 2 specimens, the Brook Trout, - - - p. 235  
From East Canada Creek.

**SALMO FONTINALIS**, (Varietas) Brook Trout, (2 specimens,) p. 235  
From one of the lakes in Hamilton county.

**SALMO CONFINIS**, The Lake Trout, - - - - - p. 238  
From Lake Ontario.

From Dr. Charles Martin, U. S. Navy, two large fish scales.

#### FAMILY SAURIDÆ.

**LEPIDOSTEUS BISON**, The Buffalo Bony Pike, - - - - - p. 271  
From Lake Ontario.

**LEPIDOSTEUS BISON**, The Buffalo Bony Pike, - - - - - p. 271  
From Lake Champlain.

Presented by John Bratt.

### ORDER IV. APODAL.

#### FAMILY ANGUILLIDÆ.

**ANGUILLA TENUIROSTRIS**, Common New-York Eel, - - - p. 310  
Taken in the Chenango canal, near Utica, in the year  
1849. Length, five feet half inch; weight, 12½ lbs.

#### CARTILLAGINOUS FISHES.

Presented by Dr. Charles Martin, U. S. Navy.

1. Spine of the ray.
2. Double spine of the ray.
3. Palatal bone of a fish.

#### FAMILY SYNGNATHIDÆ.

**HIPPOCAMPUS HUDSONIUS**, Hudson river Sea Horse, - - - p. 322  
Presented by John New of Albany.

#### ANNELIDA.

**GORDIUS AQUATICUS**, (Linn.,) Hair Worm.  
From Albany.

Presented by Charles H. Payne, of Schuylerville.

## CONCHOLOGY.

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*From Henry Rousseau, of Troy, Rensselaer co.*

ZOOLOGY—Part V.

VENUS NOTATA, 2 specimens. - - - - - p. 218

From Rockaway, Long-Island.

*From Theodore Teed, Esq., of Croton, Westchester co.*

HELIX ALBOLABRIS, 5 specimens. - - - - - p. 26

From Croton, Westchester county.

*From Almerin Marks, of Durham, Greene county.*

These specimens were obtained at the Sandwich Islands by Dwight Baldwin, a Missionary at that place.

TURBO PHASIANUS. Lim.

CERITHUM ———. 4 specimens.

TURIBINELLA CORNIGER.

MUREX ———.

STROMBUS URCEUS. 2 specimens.

STROMBUS LUHUANUS. 4 specimens.

STROMBUS ———. 2 specimens.

BUCCINUM PAPILLOSUM.

TEREBRA ———.

CYPRÆA EUROPEA. 2 specimens.

CYPRÆA CAPUT SERPENTIS.

CYPRÆA HISTRIO.

*From Doct. Charle Martin of the United States Navy.*

ACHATINA —. 13 specimens From St. Domingo.

HELIX ———. From St. Domingo.

CYPRÆA TIGRIS. From Havanna.

CYPRÆA ———.

FUSUS ———.



# RADIATA.

## CLASS POLYPI.

*From Richard H. Pease, of Albany.*

MEANDRINA —.

POCILLOPORA —. 3 specimens.

MADREPORA MURICATA. 3 specimens.

MADREPORA —.

MADREPORA —.

PORITES —.

## CATALOGUE OF THE COLLECTION OF THE LATE H. CASIMIR DE RHAM, JUN., NOW IN THE STATE CABINET.

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[Extract of a letter from Nathaniel F. Moore, LL. D., to the Secretary of the Regents, dated May 16, 1850.]

Dear Sir,—Mr. and Mrs. De Rham have authorised me to inform you of their readiness to give to the State Cabinet of Natural History, a collection of birds made by their son, H Casimir, provided any person shall be empowered by the Regents or by yourself, in their behalf, to receive it here, and to provide for its safe removal, before the month of July next.

My late nephew's friends have been much gratified at the manner in which the recent donation of minerals and shells that had belonged to him has been acknowledged, and his parents seeing into what careful and skilful hands they had consigned these things, desire me to entrust those birds also to the same. It grieves them to observe, that in spite of all their care, every year makes some inroad upon the collection, and their reluctance to part with a valued memorial of their son has therefore been surmounted by the hope that the Curators of the State Cabinet will be able to preserve what yet remains of it, much better and longer than they could themselves.

[Extract of a letter from Mrs. De Rham to the Secretary, dated New-York, June 8, 1850.]

“Permit me to thank you for your obliging letter, announcing the safe arrival of the collection of birds at their new and honorable home.

“I deeply regret the necessity of resigning them to the care of strangers, but I am quite convinced that it is the only chance of preserving them, and also the name and memory of my dear son in the world of science.”

# MAMMALIA.

## ORDER CARNIVORA.

### FAMILY SORECIDÆ.

ZOOLOGY—Part I.

CONDYLURA CRISTATA, Star-nose Mole, (m. f. & 2y.)	12
SOREX DEKAYI, De Kay's Shrew,	17

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PROCYON LOTOR, Raccoon,	26
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### FAMILY MUSTELIDÆ.

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PUTORIUS NOVEBORACENSIS, New-York Ermine,	36
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### FAMILY FELIDÆ.

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### FAMILY SCIURIDÆ.

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SCIURUS VULPINUS. Fox Squirrel,	59
SCIURUS NIGER. Black Squirrel, (male & female,)	60
SCIURUS HUDSONICUS. Red Squirrel, (male & female,)	61
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## FAMILY GERBILLIDÆ.

MERIONES AMERICANUS. Deer Mouse, - - - - - 70

## FAMILY CASTORIDÆ.

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## FAMILY MURIDÆ.

MUS LEUCOPUS. Jumping Mouse, - - - - - 82

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## FAMILY LEPORIDÆ.

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LEPUS AMERICANUS. Northern Hare, (male, fem. & young,) 95

ERINACEUS EUROPÆUS. Hedgehog, (old and young,) England.

CAPRA IBEX. Lin. Skull and horns of the male. From the Alps.

# BIRDS.

## ORDER ACCIPITRES.

### FAMILY VULTURIDÆ.

Zoology, N. Y.—Part II.

**CATHARTES GRYPHUS**, Condor, (male,)   
 From the Andes.

**CATHARTES AURA**, Turkey Buzzard, (male,) - - - - - p. 2

### FAMILY FALCONIDÆ.

**AQUILA CHRYSÆTOS**, Golden Eagle, (male,) - - - - - p. 4

This fine specimen was shot a few years since at  
Islip, Suffolk county, and is the identical one  
referred to by De Kay in his Zoology of N. Y.,  
Part II. page 4.

**HALIAETOS LEUCOCEPHALUS**, Bald Eagle, (male and female,) 5

**PANDION CAROLINENSIS**, American Fish Hawk, (male,) with  
a fish in the beak, - - - - - 6

**BUTEO SANCTI-JOANNIS**, Rough-legged Buzzard, or Black  
Hawk, (male and female,) - - - - - 7

**BUTEO BOREALIS**, Red-tailed Buzzard, (male,) - - - - - 9

**NAUCLERUS FURCATUS**, Swallow-tailed Hawk, (male,) - - 12

**FALCO COLUMBARIUS**, Pigeon Hawk, (male and female,) 15

**ASTUR ATRICAPILLUS**, American Goshawk, (male,) - - - 19

### FAMILY STRIGIDÆ.

**SURNIA FUNEREA**, Hawk Owl, - - - - - 21

**SURNIA NYCTEA**, Snowy Owl, (male,) - - - - - 22

**BUBO ASIO**, Little Screech Owl, (male and female,) - - - 25

**OTUS PALUSTRIS**, Short-eared Owl, (male,) - - - - - 28

**ULULA NEBULOSA**, Barred Owl, (male and female,) - - - 29

**ULULA ACADICA**, Acadian Owl, (male,) - - - - - 30

## ORDER PASSERES.

## FAMILY CAPRIMULGIDÆ.

ZOOLOGY—Part V.

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HIRUNDO FULVA, Cliff Swallow, (male and female,) - -	41

## FAMILY AMPELIDÆ.

BOMBYCILLA CAROLINENSIS, Cedar Bird, (female,) - - -	44
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ALCEDO ALCYON, Belted Kingfisher, (young male,) - - -	45
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## FAMILY PARIDÆ.

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ORPHEUS RUFUS, Brown Thrush, (male,) - - - - -	68
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## ZOOLOGY—Part II.

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VERMIVORA PEREGRINA, Tennessee Warbler, (male,) - -	85
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SYLVICOLA ICTEROCEPHALA, Chesnut-sided Warbler, (male,) -	102
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ICTERIA VIRIDIS, Yellow-breasted Chat, (male,) - - - -	126

## FAMILY LANIIDÆ.

LANIUS SEPTENTRIONALIS, Northern Butcherbird, (2 males,) -	127
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## FAMILY CORVIDÆ.

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GARRULUS CANADENSIS, Canada Jay, (male,) - - - - -	130
PICA CAUDATA, Magpie, (male,) - - - - -	131
CORVUS AMERICANUS, Common Crow, (male,) - - - - -	132
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SPIZA CYANEA, Indigo-bird, (male.)	- - - - - 173
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LOXIA LEUCOPTERA, White-winged Crossbill, (male.)	- - 183

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PICUS CAROLINUS, Red-bellied Woodpecker, (male.)	- - 189
PICUS ARCTICUS, Arctic Woodpecker, (male.)	- - - - 190
PICUS AURATUS, Golden-winged Woodpecker, (2 m. & f.)	- 192

## FAMILY COLUMBIDÆ.

ZOOLOGY—Part II.

ECTOPISTES MIGRATORIA, Wild Pigeon, (male.) - - - p. 196

## ORDER GALLINÆ.

## FAMILY PHASIANIDÆ.

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3 young,) - - - - - 204  
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From Sumatra.  
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## ORDER GRALLÆ.

## FAMILY CHARADRIDÆ.

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CHARADRIUS VOCIFERUS, Kildeer Plover, (male,) - - - 212  
CHARADRIUS VIRGINIACUS, Golden Plover, (male & female,) - 213  
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## FAMILY GRUIDÆ.

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## ZOOLOGY—Part II.

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## FAMILY SCOLOPACIDÆ.

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TRINGA RUFESCENS, Buff-breasted Sandpiper, (female,) - -	238
TRINGA CINCLUS, Black-breasted Sandpiper, (male,) - -	240
TRINGA SCHINZI, Schinz's Sandpiper, (male,) - - - - -	241
TRINGA PECTORALIS, Pectoral Sandpiper, (male and fem.,)	242
TRINGA CANUTUS, Red-breasted Sandpiper, (male and fem.,)	243
TRINGA PUSILLA, Wilson's Sandpiper, (male,) - - - - -	244
CALIDRIS ARENARIA, Sanderling, (2 males and fem.,) - -	245
TOTANUS MACULARIUS, Spotted Sandlark, (male,) - - -	246
TOTANUS BARTRAMIUS, Grey Plover, (male,) - - - - -	247
TOTANUS FLAVIPES, Yellow-legs, (male,) - - - - -	248
TOTANUS MELANOLEUCUS, Varied Tatler, (male and young,)	250
TOTANUS SEMIPALMATUS, Willet, (male,) - - - - -	251
SCOLOPAX WILSONI, Common American Snipe, (2 m. and f.)	256
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## FAMILY RALLIDÆ.

RALLUS CREPITANS, Salt-water Meadow-hen, (male,) - -	259
ORTYGOMETRA CAROLINA, Sora Rail, (male,) - - - - -	262
GALLINULA GALEATA, Florida Gallinule, (male,) - - -	264

This specimen is referred to by De Kay. See Zoology, Part II., page 264.

## FAMILY RECURVIROSTRIDÆ.

HIMANTOPUS NIGRICOLLIS, The Lawyer, (male and female,)	265
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## ORDER LOBIPEDES.

## FAMILY PODICIPIDÆ.

PODICEPS RUBRICOLLIS, Red-necked Grebe, (male,) - - -	276
HYROKA CAROLINENSIS, Dipper or Pied Dobchick, (male,)	277

## ORDER NATATOIRES.

## FAMILY ALCIDÆ.

ZOOLOGY—Part II.

MERGULUS ALLE, Sea Dove, (male,) - - - - - p. 280

This specimen is referred to by De Kay. See Zo-  
ology, part II., page 280.

ALCA TORDA, Razorbill, (male,) - - - - - 283

## FAMILY COLYMBIDÆ.

COLYMBUS GLACIALIS, Great Loon or Diver, (m. and f.,) - 285

COLYMBUS SEPTENTRIONALIS, Red-throated Loon, (fem.,) - 286

## FAMILY PROCELLARIDÆ.

THALASSIDROMA WILSONI, Wilson's Petrel, (male,) - - - 290

## FAMILY PELECANIDÆ.

SULA AMERICANA, American Gannet, (male,) - - - - - 295

## FAMILY LARIDÆ.

RHYNCHOPS NIGRA, Black Skimmer, (male,) - - - - - 297

STERNA HIRUNDO, Common Tern, (male,) - - - - - 298

STERNA CAYANA, Cayenne Tern, (male,) - - - - - 299

This is the specimen referred to and described by  
De Kay. See Zo., Part II., page 299.

STERNA NIGRA, Black Tern, (male and young,) - - - - - 300

LARUS ARGENTATUS, Winter Gull, (male and female,) - - 306

LARUS ATRICILLA, Laughing Gull, (male,) - - - - - 310

LARUS BONAPARTII, Bonaparte's Gull, (male and female,) - 311

LARUS SABINI, Fork-tailed Gull, (male,) - - - - - 312

This is the specimen described by De Kay. See  
Zo., Part II., page 312.

LESTRIS BUFFONI? Artic Hawk-gull, (male,) - - - - - 314

LESTRIS RICHARDSONII, Richardson's Hawk-gull, (male,) - 315

This specimen is referred to by De Kay. See Zo.,  
Part II., page 315.

## FAMILY ANATIDÆ.

ZOOLOGY—Part II.

<b>MERGUS MERGANSER</b> , Buff-breasted Sheldrake, (male,) -	p. 318
<b>MERGUS CUCULLATUS</b> , Hooded Sheldrake, (male and fem.,) -	320
<b>FULIGULA VALISNERIA</b> , Canvas-back, (male,) - - - -	321
<b>FULIGULA MARILA</b> , Broad-bill, (female,) - - - -	323
<b>FULIGULA RUFITORQUES</b> , Bastard Broad-bill, (male,) - -	325
<b>FULIGULA LABRADORA</b> , Pied Duck, (male,) - - - -	326
<b>FULIGULA RUBIDA</b> , Ruddy Duck, (male and female,) - -	327
<b>FULIGULA GLACIALIS</b> , Oldwife or Squaw Duck, (m., wint. p.)	328
<b>FULIGULA GLACIALIS</b> , Oldwife or Squaw Duck, (m. & f. y.)	328
<b>FULIGULA ALBEOLA</b> , Buffle-Headed Duck, (m. & f.) - - -	329
<b>FULIGULA CLANGULA</b> , Whistler, (male.) - - - -	330
<b>FULIGULA HISTRIONICA</b> , Harlequin Duck, (male.) - - - -	331
<b>FULIGULA MOLISSIMA</b> , Eider Duck, (male.) - - - -	332
<b>FULIGULA PERSPICILLATA</b> , Surf Duck or Coot, (immature m.)	335
<b>FULIGULA AMERICANA</b> , Broad-Billed Coot, (male.) - - -	336
<b>FULIGULA FUSCA</b> , White-Winged Coot, (male.) . - - -	337
<b>ANAS SPONSA</b> , Wood Duck, (male and young male.) - - -	338
<b>ANAS CAROLINENSIS</b> , Green-Winged Teal, (male and female.)	340
<b>ANAS ACUTA</b> , Pin-Tailed Duck, (male and female.) - - -	341
<b>ANAS CLYPEATA</b> , Shoveller or Spoonbill, (m., wint. plum.)	342
<b>ANAS CLYPEATA</b> , Shoveller or Spoonbill, (m. & f., sum. pl.)	342
<b>ANAS STREPERA</b> , Grey Duck or Gadwall, (male.) - - -	343
<b>ANAS AMERICANA</b> , American Widgeon or Bald Pate, (m. & f.)	345
<b>ANSER CANADENSIS</b> , Wild Goose, (male.) - - - -	348
<b>ANSER ALBIFRONS</b> , White-Fronted Goose, (male.) - - -	349
<b>ANSER BERNICLA</b> , Brant Goose, (male,) - - - -	351



# AMERICAN BIRDS DESCRIBED BY AUDUBON, WHICH HAVE NOT BEEN OBSERVED IN THE STATE OF NEW-YORK.

The Volume and Page refer to the Edition of Audubon's Birds of America, in 7 Volumes,—the publication of which commenced in 1840.

## VOLUME I.

- ICTINIA PLUMBEUS**, Mississippi Kite, (male,) South. States, p. 73  
**FALCO PEREGRINUS**, Great-footed Hawk, (male, with Golden-winged Woodpecker under foot,) - - - - 84  
 Southern, and occasionally in the Middle States.  
**MILVULUS TYRANNUS**, Forked-tailed Fly-catcher, (male,) - 196  
 Ranges from New-Jersey to Mississippi.

## VOLUME II.

- HELINAIA PROTONOTARIUS**, Prothonotary Swamp-Warbler, (male and female,) - - - - - 89  
 Louisiana; and is occasionally seen as far north as Louisville.  
**SIALIA OCCIDENTALIS**, Western Blue-Bird, (male,) - - - - 176  
 Banks of the Columbia River and in Upper California.  
**SIALIA ARCTICA**, Arctic Blue-Bird, (male,) - - - - - 178  
 On the banks of the Platte and Columbia Rivers; and has been seen in the Winter at Fort Vancouver.

## VOLUME III.

- TURDUS NÆVIUS**, Varied Thrush, (female,) - - - - - 22  
 Nootka Sound; and a specimen was obtained in 1826, at Fort Franklin.  
**COCCOTHTRAUSTES VESPERTINA**, Evening Grosbeak, (m. & f.,) 217  
 Sault Sainte Marie, in Michigan, and on the Rocky Mountains.  
**PYRANGA LUDOVICIANA**, Louisiana Tanager, (m. & female,) - 231  
 On the banks of the Platte and Columbia Rivers.

## VOLUME IV.

- ICTERUS BULLOCKII**, Bullock's Troopial Oriole, or Hang-nest, (male,) - - - - - p. 43  
On the banks of the Platte, and in Upper California.
- GARRULUS STELLERI**, Steller's Jay, (male,) - - - - - 107  
Nootka, and on the Pacific Coast of America from the mouth of Columbia River to the 56th parallel.
- SITTA PUSILLA**, Brown-Headed Nuthatch, (male,) - - - 181  
Florida, Georgia and Carolinas.
- PICUS PRINCIPALIS**, Ivory-Billed Woodpecker, (m. & f.) - - 214  
Carolinas, Georgia, Alabama, Louisiana and Mississippi.
- PICUS QUERULUS**, Red-Cockaded Woodpecker, (m. & f.) - 254  
From Texas to New-Jersey.
- PICUS TORQUATUS**, Lewis' Woodpecker, (male,) - - - - 280  
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- PICUS MEXICANUS**, Red-Shafted Woodpecker, (male,) - - 290  
Rocky Mountains, Columbia River, and Northward to the Saskatchewan.
- CENTURUS CAROLINENSIS**, Carolina Parrot, (young,) - - - 306  
South Carolina, Georgia, Florida, Alabama, Louisiana, and up the Mississippi to Kentucky.

## VOLUME V.

- COLUMBA PASSERINA**, Ground Dove, (male,) - - - - - 19  
It is met with from the lower parts of Louisiana to Cape Hatteras, following the Coast quite round the Floridas.
- ORTIX PLUMIFERA**, Plumed Partridge, (male,) - - - - 69  
Columbia River and Upper California.

## VOLUME VI.

- IBIS RUBRA**, Scarlet Ibis, (male,) - - - - - 53  
Bayou Sara, in Louisiana.

FOREIGN BIRDS.

- UPUPA EPOPS. (Lin.) Hoopoe, Africa.  
EPIMACHUS MAGNIFICUS, (Oken.) Rifleman, (male and female.)  
New South Wales.  
ORIOLOUS GALBULA. (Oken.) Golden Blackbird. Europe.  
GRACULA ROSEA. (Oken.) Rose-colored Thrush. East Indies.  
EDOLIUS MALABARICUS. (Oken.) Drongo. Africa.  
GALBULA VIRIDIS. (Oken.) 2 specimens. Africa.

In addition to the Birds named in the preceding catalogue of the De Rham Collection, there are twenty-two specimens of Foreign Birds, whose specific names have not been determined.

RECAPITULATION.

(DE RHAM COLLECTION.)

	No. of Specimens.
Mammalia, - - - - -	36
Birds, - - - - -	210
	<hr/>
Total, - - - - -	346





( C. )

CATALOGUE

WITH REFERENCES AND DESCRIPTIONS

OF THE

I N S E C T S

COLLECTED AND ARRANGED FOR THE

State Cabinet of Natural History,

BY ASA FITCH, M.D.

The following paper comprises all the New-York *Insects of the sub-order Homoptera* known to me, except some of the minute species, to determine which required further researches. The species and genera that are here presented as new, are indicated by an asterisk preceding the scientific name, and a brief description of these, embracing their essential characters, is added. To the described species is appended a reference to the name of the author and the place where the original description will be found.

In the generic arrangement of these insects, Amyot and Serville's *Hist. Nat. des Ins. Hemipteres*, Paris, 1843, and Westwood's *Synopsis of British Genera*, have been my chief guides. An acknowledgment is due to the Rev. D. Zeigler, of York, Pa., for a copy of Germar's paper on the genera Clastoptera, &c., in the *Zeitschrift f. d. Entom.*; and to Dr. T. W. Harris, of Harvard University, who has been so kind as to place temporarily in my hands his entire collection of Homoptera, including the several species named in his Catalogue, and also those magazines and other publications which contain all the more important papers of Germar, Spinola and Fallen upon this order of insects. I regret that these latter favors were not received in season for me to avail myself of them in preparing the following paper, though it is not probable they would vary it in any important point from the shape in which it is here presented.

Albany, February 22d, 1851.



# I N S E C T S .

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## FAMILY CICADIDÆ.

### CICADA. LINN.

FROSTED CICADA, *C. pruinosa*, (Say.) Jour. Acad. Nat. Sci., vol. iv., p. 330. The specimen was taken near the east end of Long Island. No. 609, male.

DOG-DAY CICADA, *C. canicularis*, (Harris.) Inj. Ins., p. 175. No. 610, male; 611, female.

CREVICED CICADA, *C. rimosa*, (Say.) Jour. Acad. Nat. Sci., vi. 235. Two specimens were taken in Washington county the middle of June, 1845. As these are the only ones I have ever met with, I am led to suspect that, like the following, this species may be periodical in the time of its appearance. No. 612, female.

SEVENTEEN-YEAR LOCUST, *C. septendecim*, (Linn.) Syst. Nat., ii. 708. No. 613, male.

## FAMILY FULGORIDÆ.

### CIXIUS. LAT.

STIGMA-SPOTTED CIXIUS, *C. stigmatus*, (Say.) Jour. Acad. Nat. Sci., iv. 336. On various trees and shrubs. No. 614, male; 615, female.

PINE CIXIUS, \**C. pini*. Elytra with a few fulvous, cloud-like spots; destitute of a larger black stigma and black band at the base. Length to the tip of the elytra, 0·23, (twenty-three hundredths of an inch.) Found on spruce, fir, and pine. Smaller than the preceding, and evidently distinct. No. 616, male; 617, female.

**IMPUNCTATE CIXIUS**, \**C. impunctatus*. White, dorsum yellow; two bands on the front, two dots on the vertex, and two on the prothorax, black; elytra brownish-pellucid, immaculate, nerves impunctate. Length, 0·23. Found on oaks. No. 618, male.

Var. *a*. The whole upper half of the face black. No. 619, male.

**FIVE-LINED CIXIUS**, *C. quinquelineatus*, (Say.) Jour. Acad. Nat. Sci., vi. 241. No. 620, female.

#### DELPHAX. FAB.

**FIELD DELPHAX**, \**D. arvensis*. Pallid-yellow, immaculate; elytra and wings pellucid. Length 0·17. Common in fields of wheat early in June. No. 622, male; 623, female.

**DORSAL-STRIPED DELPHAX**, \**D. dorsalis*. Dull yellow, dorsal vitta white; elytra dusky, middle apical nerve and a small dot on the tips of the outer apical nerves black; facial carinæ white, interstices black; tergum black, with a dorsal and lateral vitta orange red; legs pale yellow, striate with black. Length, 0·20. No. 621, male.

#### OTIOCERUS. KIRBY.

**DEGEER'S OTIOCERUS**, *O. degeerii*, (Kirby.) Trans. Linn. Soc., xiii. 16. On various trees. No. 624, male; 625, female.

**COQUEBERT'S OTIOCERUS**, *O. coquebertii*, (Kirby.) Tr. Linn. Soc. xiii. 18. Sometimes abundant on grape vines; also on beech and oak trees. No. 626, male; 627, female.

Var. *a*. The elytral vitta dividing into three branches. No. 628.

*b*. The vitta not prolonged upon the sides of the thorax. No. 629.

**WOLF'S OTIOCERUS**, *O. wolffi*, (Kirby.) Tr. Linn. Soc., xiii. 19. Taken on walnut bushes. No. 630, male.

**ABBOT'S OTIOCERUS**, *O. abbotii*, (Kirby.) Tr. Linn. Soc., xiii. 17. Taken on oaks. No. 631, male; 632, female.

**KIRBY'S OTIOCERUS**, \**O. kirbyii*. White; elytra without dots, with a faint brownish band from the middle of the inner to the apex of the outer margin, and spot on the apex of the inner margin. Length, 0·42, to the tip of the elytra. Found on oaks. No. 633, male; 634, female.

## ANOTIA. KIRBY.

**BONNET'S ANOTIA**, *A. bonnetii*, (Kirby.) Tr. Linn. Soc., xiii. 21.  
On willows, about the middle of September. No. 635,  
male; 636, female.

## PÆCILOPTERA. LAT.

**FROSTED PÆCILOPTERA**, *P. pruinosa*, (Say.) Jour. Acad. Nat.  
Sci., vi. 237. No. 637, male; 638, female.

**COMMON PÆCILOPTERA**, \**P. (?) vulgaris*. Blackish-pruinose; elytra with a transverse row of pellucid-white points beyond the middle; legs pallid, femurs blackish; ventral segments edged with orange; medial carina sometimes obsolete. Seems more allied to this than any other genus, though the simple neuration of its elytra, and some other marks, present discrepancies to this association. Length, 0·20. Common on various shrubs and trees. No, 639, male; 640, female.

## FAMILY MEMBRACIDÆ.

## ENCHOPHYLLUM. AMY. and SERV.

**TWO-SPOTTED ENCHOPHYLLUM**, *E. binotatum*, (Say.) Appendix to Long's Exped., p. 301. Common on numerous plants and trees. No. 641, male; 642, female.

Var. *a*. Color brown. No. 643.

**BROAD-FOOTED ENCHOPHYLLUM**, *E. latipes*, (Say.) App. to Long's Exp., p. 302. No. 644, female.

## ENTILIA. GERMAR.

**NOTCH-BACKED ENTILIA**, *E. sinuata*, (Fab.) Entom. Syst. Suppl., p. 513. No. 645, male; 646, female.

Sub-species \**torva*. Front somewhat concave, causing the anterior foliole to incline slightly forward. No. 647.

**HOLLOW-BACKED ENTILIA**, *E. concava*. (Say.) App. to Long's Exp., p. 301. That part of the generic definition which represents the thorax as "foliaceous and deeply notched" does not apply to this species. In all other respects this is so closely related to the preceding as scarcely to call for a generic separation. Both species occur on various herbs and trees, particularly on the Canada thistle, where the larvæ are, like plant-lice, attended by ants, which protect them and subsist upon their saccharine secretions. No. 648, male; 649, female.



## \*CARYNOTA.

(Gr. *καπα*, roundish, *νωτος*, the back.) Head broad, triangular; thorax in form of a half cone, not compressed above into a sharp or foliaceous edge; elytra with five terminal cells, the apical triangular with its end rounded; border broad, slightly wrinkled; nerves strong, elevated. Allied to *Gargara*, from which genus however, our species are excluded by the form of the head and of the apical cellule.

BUTTERNUT CARYNOTA. *C. mera*, (Say.) Jour. Acad. Nat. Sci., vi. 301. On the butternut. No. 650, female.

OAK, OF ARCH-STRIPED CARYNOTA, *C. arquata*, (Say.) Jour. Acad. Nat. Sci., vi. 302. On different species of oaks. No. 651, female; 652, male (?)

## SMILIA. GERMAR.

UNADORNED SMILIA, *S. inornata*, (Say.) Jour. Acad. Nat. Sci., vi. 299. Common on oaks, chestnut, hickory, &c. No. 653, male (?); 654, female.

Var. *a*. Edge of the keel not fuscous-black. No. 655.

UNARMED SMILIA, *S. inermis*, (Fab.) Ent. Syst. iv. 15. On oaks. No. 656, male; 657, female.

V-MARKED SMILIA, *S. vau*, (Say.) Jour. Acad. Nat. Sci., vi. 299. Abundant, particularly upon the white oak. No. 658, female.

Var. *a*. Elytra fuliginous throughout. No. 659.

*b*. Elytra hyaline throughout. No. 660.

*c*. The thoracic bands margined with black. No. 661.

*d*. Front tinged with sanguineous. No. 662.

*e*. Head white. No. 663.

*f*. Head white, with sparse large black punctures. No. 664.

*g*. Posterior thoracic band obsolete. No. 665.

*h*. Bands obsolete; a fulvous spot above each eye. No. 666.

*i*. White; apex of the thorax and a spot above each eye fulvous. No. 667.

*j*. Apex of the thorax white. No. 668.

**CHESTNUT SMILIA**, \**S. castaneæ*. Fuscous, more or less green when recent; head, anterior edges of thorax and all beneath, bright yellow; elytra hyaline with an apical and large longitudinal basal spot, fuscous. Length, male 0·25, female 0·30. Common on the chestnut. No. 669, male; 670, female.

Var. *a*. Face with scattered fuscous dots. No. 671.

**OAK SMILIA**, \**S. querci*. Black, with an abbreviated bright yellow dorsal vitta, which is commonly interrupted near its tip; legs pale yellow. Length, 0·22. On oaks. No. 672, male.

Var. *a*. Dorsal vitta not interrupted. No. 673.

**STRIPED SMILIA**, *S. vittata*, (Amyot and Serv.) Hemipt. p 539. Common on the red and black oak. No. 674, female.

Subsp. \**guttata*. The oblique stripe replaced by a few greenish spots or dots. No. 675.

**EARED SMILIA**, \**S. auriculata*. Bright green, when faded mottled with yellow, immaculate; humeral angles somewhat salient, rounded; keel evenly rounded, much elevated, anteriorly advanced and overhanging the head; elytra scarcely exceeding the tip of the thorax. Length, from the front 0·35, from the anterior end of the keel 0·40; height 0·23. — On oaks. Rare. No. 676, male.

#### \*CYRTOISA.

(Gr. κυρτος, curved, hump-backed.) Humeral angles rounded, not salient; dorsum compressed-foliaceous, forming a regularly arched keel highest near its middle, and at most with a slight concavity posteriorly; apical cellule triangular, its end rounded. Differs from Smilia in having the keel most elevated in its middle instead of anteriorly.

**MARBLED CYRTOSIA**, *C. marmorata*, (Say.) Jour. Acad. Nat. Sci., vi. 301. On oaks. No. 677, female.

**WINDOWED CYRTOSIA**, \**C. fenestrata*. Yellow marbled with rufous; a pellucid spot behind the summit of the keel and a smaller one half way to the apex; an oblique yellow vitta below the anterior spot, margined with fuscous or sanguineous; tip of the thorax reaching beyond the terminal cells of the elytra. Male black, the pellucid



spots almost obsolete and the yellow vitta replaced by a few yellow dots. Length 0.25. On oaks. No. 678, male ; 678 (bis) female.

CERESA. AMY. and SERV.

TWO-HORNED CERESA, *C. diceros*, (Say.) App. to Long's Exp., p. 299. Occurs like the following, on various trees and shrubs. No. 679, female.

BUFFALO CERESA, *C. bubalus*, (Fab.) Ent. Syst., iv. 14. No. 680, male ; 681, female.

Var. *a*. Sides of the thorax mottled with fuscous.  
No. 682.

*b*. Under side black-brown. No. 683.

\*TELAMONA.

(From *Telamones*, a synonym of *Atlantes*, in allusion to the enormous backs of these insects.) Humeral angles projecting, pointed and ear-like: dorsum compressed-foliaceous, the keel abruptly elevated at one or both its ends, forming a somewhat square crest or foliole: thorax nearly or quite reaching the tips of the elytra, with elevated longitudinal lines on each side: apical cellule triangular, its end rounded. The squarish dorsal crest forms a marked distinction between the genus here proposed, and that of *Thelia*, to which it is most nearly related.

ONE-COLORED TELAMONA, \**T. unicolor*. Yellow, immaculate, apex of the thorax tinged with fuscous; summit and angles of the crest rounded. Length 0.45, height 0.25. No. 684, female.

BANDED TELAMONA, \**T. fasciata*. Yellow; thorax anteriorly and at its apex, and an oblique band crossing the posterior part of the crest fuscous; head and anterior margin of the thorax yellow, with numerous black punctures and a black dot above each eye; crest longer at its base than above, anterior end more concave than the posterior, angles rounded. Length 0.38, height 0.20. Found on walnut trees. No. 685, female.

HOLLOW-CRESTED TELAMONA, \**T. concava*. Brown; a large spot on each side and a transverse band behind the crest, yellow, with sinuous black margins, the spot traversed by an



interrupted flexuous black line ; summit of the crest slightly concave posteriorly, with a small yellow spot ; crest contracted at its base before and more strongly behind, its posterior angle rectangular, its anterior rounded and more elevated. Length 0·42, height 0·22. No. 686, female.

**BEECH TELAMONA**, \**T. fagi*. Black, varied with obscure cinereous ; anterior half of the crest double the height of the posterior half, and elevated from it perpendicularly. Length 0·40. Taken on beech trees. No. 687, male.

**WOODBINE TELAMONA**, *T. ampelopsidis*, (Harris.) Inj. Ins. p. 180. On the woodbine. No. 688, female.

**SAD TELEMONA**, \**T. tristis*. Fuscous mottled with pallid ; crest with a white line on its posterior base and one or two small pellucid spots in its upper edge ; three black dots over each eye ; posterior angle of the crest nearly rectangular and almost as high as the anterior, the upper edge nearly straight. Length 0·35. Found on bushes of hazelnut, &c. No. 689, female.

**HAZELNUT TELAMONA**, \**T. coryli*. Pale dull yellow ; an abbreviated band occupying the anterior end of the crest, a curved and fuscous-margined band crossing its posterior end, and the apex of the thorax, ferruginous ; form of the crest similar to that of *tristis*. Length 0·32. Taken on hazelnut bushes. No. 690, female.

**OAK TELAMONA**, \**T. querci*. Green, freckled with yellow, fading to dull yellow punctured with black ; crest with a pale yellow vitta on its posterior edge ; angles of the crest rounded, the anterior much higher than the posterior. Length 0·40. On different species of oak. No. 691, male ; 692 female.

**RECLIVATE TELAMONA**, \**T. reclivata*. Greenish white ; a sub-interrupted band crossing the back part of the crest, a stripe at its posterior base, and the apex of the thorax brownish black ; anterior end of the crest strongly inclined backwards, rectilinear. Length 0·35. On oaks and chestnut. No. 693, female.

## THELIA. AMY. and SERV.

TWO-SPOTTED THELIA, *T. bimaculata*, (Fab.) Entom. Syst. iv. 10.

Occurs on the locust. No. 694, male.

SINGLE-STRIPED THELIA, *T. univittata*, (Harris.) Inj. Ins., p. 180.

On oaks. No. 695, male; 696, female.

THORN-RUSH THELIA, \**T. cratægi*. Fuscous varied with black and white; thorax with two broad white bands margined with black, the anterior narrowed on the front and notched on each side at the base of the foliole. Length, 0.34; height, 0.13; to the apex of the foliole 0.26. On the thorn. No. 697, female.

## TRAGOPA. GERM.

DORSAL TRAGOPA, \**T. dorsalis*. Greenish-white, polished; elytra hyaline; occiput, pectus, and large dorsal spot sending a branch towards each eye, black. Males black, with the face, apex of the thorax, the abdomen and feet greenish-white. Length, 0.20. On grape vines. No. 698, male; 699, female.

## UROXIPHUS. AMY. and SERV.

WALNUT UROXIPHUS, *U. caryæ*. Dull brown; elytra towards the apex obscure-cinereous; abdomen and annulus on the tibiæ pale yellowish; sternum pruinose-white. Length, male, 0.30; female, 0.37. On the walnut and pig-nut. No. 700, male; 701, female.

Var. *a*. Femurs rufous, tibiæ and base of the hind tarsi pale yellow. No. 702.

## FAMILY CERCOPIDÆ.

## APHROPHORA. GERM.

FOUR-SPOTTED APHROPHORA, *A. quadrinotata*, (Say.) Jour. Acad. Nat. Sci., vi. 304. Taken on grape vines. No. 703, male; 704, female.

Var. *a*. Elytra nearly hyaline. No. 705.

## LEPYRONIA. AMY. and SERV.

**FOUR-CORNERED LEPYRONIA**, *L. quadrangularis*, (Say.) Jour. Acad. Nat. Sci., iv. 335. Common in autumn and spring in groves of the sugar-maple, where numbers may often be met with, drowned in the vessels of sap. No. 706, male; 707, female.

**PARALLEL-MARKED LEPYRONIA**, *L. parallella*, (Say.) App. to Long's Exp., p. 303. Common on the white pine. No. 708, male; 709, female.

**SARATOGA LEPYRONIA**, \**L. saratogensis*. Pale fulvous varied with white; anterior and posterior margins of the vertex parallel. Closely related to *parallella*, but that has the vertex crescentiform, is much darker colored, and is confluent nigro-punctate. Here the punctures are uncolored. Length, 0.40. Common on the pitch pines of Saratoga plains, and is sometimes met with on the white pine also. No. 710, male; 711, female.

Var. *a*. Dorsal vitta obsolete; elytra pellucid-white. No. 712.

## CLASTOPTERA. GERM.

**OBTUSE CLASTOPTERA**, *C. obtusa*, (Say.) Jour. Acad. Nat. Sci., iv. 339. If this is not the *C. achatina*, Germ., that species is unknown to me. No. 713, male; 714, female.

**TESTACEOUS CLASTOPTERA**, \**C. testacea*. Testaceous; scutel rufous; elytra with a polished callous-like black dot near the apex. Length, 0.20. Found on oaks and pines. No. 715, female.

Var. *a*. A black callous-like dot on each side of the pectus. No. 716.

*b*. Pectoral dots present, elytral dots wanting. No. 717.

*c*. The black dots wanting, both on the elytra and pectus. No. 718.

**PINE CLASTOPTERA**, \**C. pini*. Black; head yellow, with a black band on the anterior margin of the vertex; thorax with a yellow band anteriorly; elytra with a broad hyaline



outer margin interrupted in the middle, and a black callous dot near the apex. Length, 0.14. Found chiefly on pines. No. 719, male.

Var. *a*. A ferruginous dot on the apex of the scutel.  
No. 720.

*b*. The yellow thoracic band widely interrupted.  
No. 721.

**PROTEUS CLASTOPTERA**, \**C. proteus*. Head bright yellow, a black band on the anterior margin of the vertex and a broader one on the front; front polished, without transverse striæ; a callous black dot near the apex of the elytra; legs yellowish-white, tarsi black. Length, 0.16; males slightly smaller. Abundant on the paniced dog-wood, (*Cornus paniculata*.) Closely allied to the *C. atra*, (Germar,) but on examining a host of specimens, not one occurs in which the legs are annulated with black or fuscous. No. 722, female.

This pretty insect, though so small in size, presents an astonishing number of sub-species and varieties, so clearly and distinctly marked that at first glance they would be confidently regarded as well characterized species. The following are the more prominent, though by no means all, of the varieties that occur:

Sub.sp. 1. *flavicollis*. Thorax entirely yellow.

Var. *a*. Elytra yellow. No. 723.

*b*. Elytra with an oblique blackish vitta. No. 724.

Sub.sp. *cincticollis*. Thorax with a black band.

Var. *a*. An interrupted black band on the anterior margin of the thorax. No. 725.

*b*. An entire black band on the anterior margin of the thorax. No. 726.

*c*. Thoracic band crossing the disk instead of the anterior margin. No. 727.

*d*. Band on the disk of the thorax, and scutel black. No. 728.

Sub.sp. *maculicollis*. Thorax with one or two discoidal spots.

Var. *a*. A black spot on the disk and interrupted band anteriorly. No. 729.

b. A black spot on the disk and anterior band entire. No. 730.

c. Two black spots on the disk of the thorax. No. 731.

Sub-sp. *nigricollis*. Thorax black, with a yellow band forward of the disk.

Var. *a*. The black band on the anterior margin of the thorax interrupted. No. 733.

b. The band continuous, No. 734.

c. Scutel black, with a yellow dot at its base. No. 735.

d. Scutel entirely black. No. 736.

### FAMILY TETTIGONIIDÆ.

#### TETTIGONIA. GEOFF.

FORK-STRIPED TETTIGONIA, *T. bifida*, (Say.) Jour Acad. Nat. Sci., vi. 313. On grass in meadows. No. 737, male; 738, female.

Var. *a*. The usual three white dots in the black frontal spot confluent, forming a lunule. No. 739.

b. Two white dots only on the front. No. 740.

c. The orange color on the sides of the front replaced by black. No. 741.

THREE-DOTTED TETTIGONIA, \**T. tripunctata*. White; vertex with two black dots on the disk and a third on the apex; thorax with two pale brown bands; elytra pellucid-white, the longitudinal nervures brown, except at their tips; head longer and more pointed than in the preceding species. Length, 0.20. Taken on dog-wood. No. 742, male.

#### PROCONIA. LEPEL. and SERV.

FOUR-STRIPED PROCONIA, *P. quadrivittata*, (Say,) Jour. Acad. Nat. Sci., vi. 312. In having the vertex flattened, this and the succeeding species are widely separated from the two foregoing. Common, on various shrubs. No. 743, male; 744, female.

- Var. *a.* Spots on the thorax sanguineous. No. 745.  
*b.* Thorax with two black spots at its base. No. 746.  
*c.* Thorax margined with black at its base. No. 747.  
*d.* Disk and base of thorax green, immaculate. No. 748.  
*e.* Thorax with a green mark shaped like a trident, based on its posterior margin. No. 749.

AULACIZES. AMY. and SERV.

TENDER-FOOTED AULACIZES, *A. mollipes*, (Say.) Jour. Acad. Nat. Sci., vi. 312. Common on the grass of meadows and pastures. No. 750, male; 751, female.

NEW-YORK AULACIZES, \**A. noveboracensis*. Yellow; elytra and large spot at the base of the thorax, olive-green; no black vitta on the sides of the pectus; head shorter, broader, and its apex more obtuse, than in *mollipes*. Length, 0.33. Rare. On grass in meadows. No. 752, female.

\*HELOCHARA.

(Gr. ἑλος, a marsh, χαίρω, to rejoice.) Head obtuse-triangular, broader than long, slightly broader than the thorax, the transversely-striated front reflected over on to the anterior sides of the vertex; vertex with a slight longitudinal stria; ocelli on the vertex, farther from each other than from the eyes; tips of the male antennæ knobbed; elytra with five terminal and three discoidal cells. By its knobbed antennæ, this genus occupies a similar rank in the sub-family *Tettigonides*, that *Idiocerus* does in that of *Jassides*.

COMMON HELOCHARA, \**H. communis*. Dark green; females grass-green, when faded variously mottled with tawny yellow; beneath, more or less black, legs testaceous. Length, 0.20. On grass in marshy situations, often excessively numerous. No. 753, male; 754, female.

Var. *a.* The usual transverse row of large punctures on the foreside of the thorax obsolete. No. 755.



## EVACANTHUS. LEPEL. and SERV.

ORBITAL EVACANTHUS, \**E. orbitalis*. Black, shining; orbital margins, antennæ and legs, tawny white; elytra deep fuscous, nerves and large spot at the apex of the outer margin white; face with a tawny white, transverse spot or band above. Length, 0.18, to tip of female abdomen 0.20. On dogwood, the last of July. Rare. No. 756, male.

## GYPONA. GERM.

YELLOW-STRIPED GYPONA, \**G. flavilineata*. Pale green, immaculate; thorax with eight pale yellow vittæ, the middle ones common to the vertex and scutel. *Tettigonia 8-lineata*, var. *a*, of Say. Having never met with specimens possessing rosaceous stripes and nervures, and this insect being larger in size than the *8-lineata*, I am induced to regard it as a distinct species. Length, 0.35 to 0.45. Common on oaks, maple, walnut, &c. No. 757, male; 758, female.

RED-MOTTLED GYPONIA, \**G. scarlatina*. Dull yellowish brown; elytra with rosaceous nerves and dots; thorax without vittæ; common disk of the elytra sparsely dotted with black; length, 0.40. No. 759, female.

## PENTHIMIA. GERM.

AMERICAN PENTHIMIA, \**P. americana*. Black; elytra white towards the apex; two dots on the anterior edge of the vertex, and a spot on each outer angle of the thorax sanguineous or rufous. Female, with the vertex, thorax, scutel and venter, sanguineous. Closely allied to the European varieties *hemorrhoea* and *sanguinicollis*, (Fab.) but is a size larger. Length, 0.23. Rare. Taken on the sugar maple. No. 760, male; 761, female.

## ACOCEPHALUS. GERM.

YELLOW ACOCEPHALUS, \**A. vitellinus*. Yellow; elytra longer than the abdomen, with pellucid spots, and on the margins towards the apex a few black dots. Length, 0.26. Found on the sugar maple. No. 762, male.

Var. *a*. Four faint tawny yellow vittæ on the thorax, and an oblique tawny band across the middle of the elytra. No. 763, female.

#### CÆLIDIA. GERM.

BANDED CÆLIDIA, *C. subbifasciata*, (Say.) Jour. Acad. Nat. Sci., vi. 310. Found on beech trees. I have also taken this species in Kentucky and Illinois. No. 764, female.

GARDEN CÆLIDIA, *C. olitoria*. (Say.) Jour. Acad. Nat. Sci., vi. 310. Taken on raspberry bushes. No. 765, female.

#### BYTHOSCOPIUS. GERM.

BLACK-BACKED BYTHOSCOPIUS, \**B. tergatus*. Sordid green, immaculate; elytra smoky; tergum black; beneath greenish yellow; tarsi pale brown. Length, 0·30. On willows. No. 766, male.

ONE-COLORED BYTHOSCOPIUS, \**B. unicolor*. Greenish-yellow, immaculate; elytra hyaline; length, 0·28. Taken on flowers of goldenrod. No. 767, female.

HALF-CLOTHED BYTHOSCOPIUS, *B. seminudus*, (Say.) Jour. Acad. Nat. Sci., vi. 307. Found on birch trees. No. 768, female.

SADDLED BYTHOSCOPIUS, *B. clitellarius*, (Say.) Jour. Acad. Nat. Sci., vi. 309. On various herbs and shrubs. No. 769, male; 770, female.

PINE BYTHOSCOPIUS, \**B. strobi*. Yellowish-brown; elytra with three white bands, and closely inscribed with fuscous points and lines, outer margin with small fuscous spots; beneath brown; legs pallid, with spine-bearing black dots. Length, 0·20. Common on pines in May. No. 771, male; 772, female.

#### IDIOCERUS. LEWIS.

WEeping IDIOCERUS, \**I. lachrymalis*. Brown varied with white; elytra hyaline, immaculate, nerves fuscous; a black spot at the anterior edge of each eye; two remote black dots on the fore side of the vertex commonly connected by a transverse black line; scutellum with a transverse black spot on the disk and two triangular ferruginous

spots at the base. Length, 0·28. Taken on poplar and walnut trees. No. 773, male; 774, female.

Var. *a*. The black frontal line prolonged to the spots forward of the eyes. No. 775.

*b*. The usual small black spot beneath each ocellus wanting. No. 776.

*c*. The black frontal line wanting. No. 777.

*d*. One or two small four-sided discoidal cells in the elytra in addition to the usual number. No. 778.

**ALTERNATE-MARKED IDIOCERUS**, \**I. alternatus*. Brown varied with white; elytra hyaline, immaculate, nerves fuscous with white alternations; two remote black dots on the anterior edge of the vertex; scutel with two dots on its disk and two triangular spots at its base black. Length, 0·22. Common, on willows. No. 779, male; 780, female.

**SPOTTED-WINGED IDIOCERUS**, \**I. maculipennis*. Chestnut-brown varied with white; elytra hyaline, with a large fuscous spot on the middle and another at the apex of the outer margin, with an intervening white spot; a faint white spot towards the base of the sutural margin. Length, 0·25. Taken on thorn bushes. No. 781, female.

**SUTURE-STRIPED IDIOCERUS**, \**I. suturalis*. Yellowish white; elytra hyaline with a dusky vitta on the suture, and two dusky spots on the base of the scutel. I have never met with the males of this and the following species, but their facial ocelli and elytral neuration indicate this to be their generic place. Length, 0·25. Taken on chestnut trees. No. 782, female.

**PALE IDIOCERUS**, \**I. pallidus*. Greenish white, immaculate; elytra hyaline. Length, 0·22. On poplars and willows. No. 783, female.

#### PEDIOPSIS. BURM.

**GREEN PEDIOPSIS**, \**P. viridis*. Light green, immaculate; elytra pellucid, almost hyaline. Length, 0·18. No. 784, female.



**THREE-SPOTTED PEDIOPSIS**, \**P. trimaculatus*. Dull brown; scutel with a black spot at each angle, the posterior one sometimes obsolete; elytra with pellucid white spots situated one on the apex, one on the disk, and a third anteriorly, scutellar region obscure cinereous; face whitish. Length, 0·18. No. 785, female.

ATHYSANUS. BURM.

To this genus we refer those species which differ from *Macropsis* and *Pediopsis* in having the ocelli between the vertex and the face, and from *Jassus* in having the elytral suture straight.

**VARIABLE ATHYSANUS**, \**A. variabilis*. Sulphur-yellow; elytra commonly with an oblique black vitta, their tips pellucid; vertex, thorax and scutel often fulvous or black. Length, 0·20. Abundant on birch trees, in June. No. 786, female.

Var. *a*. Dull yellowish-white throughout. No. 787.

*b*. Bright sulphur-yellow throughout. No. 788.

*c*. An oblique black stripe on each elytron. No. 789.

*d*. Vertex, thorax and scutel tawny yellow. No. 790.

*e*. Vertex and thorax tawny yellow, scutel black. No. 791.

*f*. Vertex, thorax and scutel black. No. 792.

**SPRUCE-TREE ATHYSANUS**, \**A. abietis*. Black, shining; head light yellow, mouth and two bands on the vertex confluent at their ends, black; middle of the sutural edge of the elytra with a white streak. Length, 0·20. Taken on the black spruce. No. 793, female.

**WINDOWED ATHYSANUS**, \**A. fenestratus*. Brownish-black; face and scutel rufous; elytra each with a pellucid spot near the apex, another on the disk, and a third opposite this last on the sutural margin. Length 0·20. On birch trees. No. 794, female.

**SMALLER ATHYSANUS**, \**A. mincr*. Cinnamon-yellow; elytra with a discoidal and large apical spot hyaline. Length, 0·18. Common on birch trees. No. 795, female.

BEECH-TREE ATHYSANUS, \**A. fagi*. Elytra fuscous, immaculate; scutel, face and pectus black; venter and legs light yellow. Length, 0.18. Taken on beech trees. No. 796, female.

BLACK-NOSED ATHYSANUS, \**A. nigrinasi*. Pale yellow, lower part of the face black or fuscous. Length, 0.18. Common, particularly upon the hornbeam, (*Carpinus americana*.) Presents many varieties. No. 797, female.

AMBLYCEPHALUS. CURTIS.

CURTIS'S AMBLYCEPHALUS, \**A. curtisii*. Greenish yellow; two dots on the vertex, band on fore part of the thorax, and six vittæ on each elytron, black; beneath black. Length 0.15. Common particularly on the grass of meadows. No. 798, male; 799, female.

SAY'S AMBLYCEPHALUS, \**A. sayii*. Pale yellowish, without dots; elytral cells partially margined with fuscous or black, nerves white. Length 0.13. Abundant on grass in pastures and meadows. No. 800, male; 801, female.

Var. *a*. A black spot on the base of the thorax.  
No. 802.

*b*. Three black spots on the base of the thorax.  
No. 803.

*c*. Only the apical cells margined with fuscous at their tips. No. 804.

MELSHEIMER'S AMBLYCEPHALUS, \**A. melsheimerii*. Pallid, base of the tergum black; elytra pellucid, nerves white. Length 0.10. Common on grass. No. 805, male; 806, female.

INIMICAL AMBLYCEPHALUS, *A. ? inimicus*, (Say.) Jour. Acad. Nat. Sci., vi. 305. Though this much resembles the species named *Sayii*, above, it differs from this genus by the length of its elytra, and from *Jassus* by its striated front and the number of its discoidal and apical cells. It probably forms the type of a separate genus. Common on grass, and its larva has been said to depredate upon the roots of young wheat. No. 807, male; 808, female.

Var. *a*. Nerves white, cells margined with fuscous.  
No. 809.

- b. Two smaller dots between the ordinary ones on the head. No. 810.
- c. Two dots only on the neck. No. 811.
- d. Dots on the neck all wanting. No. 812.

## JASSUS. FAB.

FRECKLED JASSUS, \**J. irroratus*, (Say.) Jour. Acad. Nat. Sci., vi. 308. Common on herbage. No. 813, male; 814, female.

Var. *a*. A transverse row of five white dots on the anterior edge of the head. No. 815.

YELLOW-BACKED JASSUS, \**J. fulvidorsum*. Head, thorax and scutel sordid yellow, uninscribed; elytra white, closely inscribed with fuscous lines and points, and on the outer margin irregular spots. Length 0.25. On pines. No. 816, male; 817, female.

POINTED JASSUS, *J. ? acutus*, (Say.) Jour. Acad. Nat. Sci., vi. 306. Found on hornbeam. No. 818, male.

## \* ERYTHRONEURA.

(Gr. *ερυθρος*, red, *νευρον*, nerve; in allusion to the color of portions of the elytral nerves in several of the species.) Head crescentiform, about as broad as the thorax; vertex rounded down to the front without an angular edge; ocelli between the vertex and the front, almost as near each other as to the eyes: elytra without closed cells in the disk; apical cells four, longish; middle apical nerve simple. Forward of the transverse nerve the exterior and middle nerves are sometimes obsolete. For a group of our small *Jassides*, whose elongated linear bodies give them the aspect of *Tettigoniides*, no place appears among the genera defined by Amyot and Serville. This and the following genus is therefore proposed for their reception.

WOUNDED ERYTHRONEURA, \**E. vulnerata*. Fulvous-brown spotted and lined with whitish; elytra with an abbreviated yellowish-white vitta on the outer margin, interrupted near the middle by an oblique black line, and towards the apex by an oblique sanguineous one; tips dusky, with whitish nervures and spots; a whitish medial line common to the vertex, thorax and scutel; beneath



black, legs pallid. Length 0·12, On raspberry bushes, grape vines and other situations where the foliage is dense, often in great numbers. No. 819, male ; 820, female.

GRAPE-VINE ERYTHRONEURA, *E. vitis*, (Harris.) Inj. Ins., p. 184.

Inhabits with the preceding. No. 821, female.

ALLIED ERYTHRONEURA, \**E. affinis*. Pale yellow ; elytra hyaline, spotted with light yellow, with a black dot on the inner margin towards the apex, and a broad yellowish brown band on the base. Allied to *basillaris* Say, but readily distinguished, being destitute of sanguineous markings. Length 0·12. No. 822, female.

THREE-BANDED ERYTHRONEURA, \**E. tricineta*. Pale yellow, with three broad bands, the anterior velvet-black, occupying the thorax and basal half of the scutel ; the middle bright ferruginous ending outwardly in black, forward of the middle of the elytra, the posterior dusky brown, on the apex. Length 0·12. No. 823, female.

Var. *a*. Anterior band sanguineous. No. 824.

OBLIQUE-STRIPED ERYTHRONEURA, *E. obliqua*, (Say.) Jour. Acad. Nat. Sci., iv. 342. No. 825, male.

BEAN-VINE ERYTHRONEURA, *E. fabæ*, (Harris.) Inj. Ins., p. 186. No. 826, male ; 827, female.

#### \* EMPOA.

(Gr. *εμ*, upon, *πoα*, herbage.) Differs from *Erythroneura* in having the apical nerve widely forked, forming a triangular apical cell, which is shorter than the three other terminal cells.

OAK EMPOA, *E. querci*. White ; elytra pellucid, with three blackish dots in a transverse row behind the middle. Length 0·12. On oaks, sometimes excessively numerous. No. 828, female.

SCARLET EMPOA, *E. coccinea*. Scarlet-red, immaculate, pectus and venter orange, elytra brownish-pellucid. Length 0·10. Taken on pines. No. 829, male.

## FAMILY PSYLLIDÆ.

## PSYLLA. GEOF.

THREE-DOTTED PSYLLA, \**P. tripunctata*. Wax-yellow, dorsum black; legs and antennæ pale yellow, the latter black at the tips; elytra hyaline, nerves brown, beyond the furcation widely margined with smoky-fulvous, a blackish dot on the middle of the terminal margin of each of the inner apical cells. Length 0·16. No. 830, female.

FOUR-LINED PSYLLA, \**P. quadrilineata*. Bright fulvous; elytra hyaline, nerves blackish; four whitish longitudinal lines on the middle of the metathorax; abdomen black with a yellow band at its base. Length 0·12. No. 831, female.

HORNBEAM PSYLLA, \**P. carpini*. Light-green or greenish yellow; elytra hyaline, nerves light green. Length 0·16. Common on the hornbeam, in July. No. 832, male; 833, female.

ANNULATED PSYLLA, \**P. annulata*. Straw yellow; legs white; elytra hyaline, nerves straw yellow; antennæ black, basal half straw-yellow annulated with black. Length 0·15. Occurs on the sugar-maple. No. 834, male; 835, female.

## LIVIA. LAT.

VERNAL LIVIA, \**L. vernalis*. Bright ferruginous; pectus and tips of antennæ black; legs ferruginous-pallid. Length 0·15. Found in spring in vessels of sap of the sugar-maple. No. 836, male; 837, female.

BLACK-LEGGED LIVIA, \**L. femoralis*. Bright ferruginous; pectus, four forward femurs and tips of the antennæ black. Perhaps not distinct from the preceding. Length, 0·15. Taken on a pine tree, in July. No. 838, female.

## FAMILY APHIDÆ.

APHIS. LINN.

APPLE-TREE APHIS, *A. mali*, (Fab.) Ent. Syst. iv. 216. Common on the under side of the leaves and tips of the young branches of the apple-tree. No. 839, male.

CHERRY-TREE APHIS, *A. cerasi*, (Fab.) Ent. Syst. iv. 211. Common on the under side of the leaves of the garden cherry, (*Cerasus vulgaris*, Mill.) No. 840, male.

CHERRY-INHABITING APHIS, *\*A. cerasicolens*. Palegreenish yellow; antennæ and legs black, base of the femurs pallid; nerves of the fore wings dusky, stigma pellucid white; abdominal horns quite short. When irritated, the legs and antennæ instantly emit from their pores a bluish white cotton-like substance, which remains adhering to them, resembling fine mould. Length 0·20 to the tips of the wings. On the common black-cherry-tree, (*Cerasus serotina*, DC.) No. 841, male.

BERBERRY APHIS, *\*A. berberidis*. Black; pectus and abdomen pale yellow, tip black; legs dusky; larva and pupa pale, with a green or black vitta on each side of the back, parallel with the outer margin. Length, 0·10. On the under side of berberry leaves. No. 842, male; 843, female.

CABBAGE APHIS, *A. brassicæ*, (Linn.) Syst. Nat. ii. 734. Common on the under side of cabbage leaves. No. 844, male.

SILK-WEED APHIS, *\*A. asclepiadis*. Black; abdomen pale green; sides with two rows of impressed fuscous dots, three in the lower, larger, five in the upper; abdominal horns nearly equalling the tip; stigma smoky-whitish; nerves brown; the costal whitish. Length 0·15. On the lower surface of young leaves of the common silk-weed. No. 845, male.

DOGWOOD-LEAF APHIS, *\*A. cornifoliæ*. Apterous females black, subpruinose, obovate; legs pale yellow, feet black; antennæ pale yellow, tips black; horns nearly equalling the truncated tip of the abdomen. Length, 0·05, to tip of abdomen. On the under surface of the leaves of *Cornus paniculata*. No. 846, female.



- THORN-LEAF APHIS, *\*A. cratægifoliæ*. Black; abdomen green, with a row of blackish dots along each side; nerves of the fore wings whitish, black at their tips; tibiæ, except at their tips, and base of the femurs, green; horns nearly half equalling the tip of the abdomen. Length, 0·15. On the leaves of *Cratægus punctata*, corrugating them. No. 847, male.
- BIRCH-INHABITING APHIS, *\*A. betulæcolens*. Sulphur-yellow; antennæ deep black, two basal joints sulphur-yellow, the following joints white at their bases; stigma pellucid yellowish; nerves black, the costal and marginal sulphur-yellow, base of the forked nerve hyaline; horns very short. Length, 0·18. No. 848, male.
- MAPLE-TREE APHIS, *A. aceris*, (Linn.) Syst. Nat. ii. 736. Our insect appears to correspond with the brief description given of this species. Occurs on the *Acer pennsylvanicum*. No. 849, male.
- ELDER-LEAF APHIS, *\*A. sambucifoliæ*. Black; tibiæ and base of the femurs pallid; stigma dusky; nerves black, the furcate one hyaline at its base. Length, 0·15. On the under side of the leaves of the elder. No. 850, male.
- PINE-INHABITING APHIS, *\*A. pinicolens*. Straw-yellow, densely pruinose; antennæ black, bases pallid, with a fuscous annulus; fore wings with a fuscous spot on the apex of each nerve; nerves brown, hyaline at their bases, the costal straw-yellow; horns very short. Length, 0·25. Solitary on the pine. No. 851, male.
- POPLAR-LEAF APHIS, *\*A. populifoliæ*. Chestnut-brown, pruinose; legs hairy, black, above the knees pale brown; stigma smoky fulvous, margined with black; nerves brown; tergum with two dorsal rows of impressed, quadrate, fuscous spots, and on each side two rows of impressed dots; horns equalling a third of the distance to the tip. Length, 0·22. On the leaves of the *Populus grandidentata*. No. 852, male.
- CONE-FLOWER APHIS, *\*A. rudbeckiæ*. Red; antennæ and legs black, basal half of the femurs pale yellow; horns equaling the tip; stigma yellowish; nerves brown, the costal sulphur-yellow; Length, 0·20. Infests the upper part of the stalks of *Rudbeckia laciniata*, *Solidago serotina* and *S. gigantea*. No. 853, male.

## LACHNUS. ILLIG.

**SPRUCE-TREE LACHNUS**, \**L. abietis*. Apterous females pubescent, broad oval, blackish clouded with lurid brown, with a faint cinereous dorsal vitta; venter lurid, pruinose, with a black spot near the tip; antennæ sordid-white, with a black annulus at the apex of each joint. Length 0·15 to tip of the abdomen. Occurs on the *Abies nigra*. No. 854, female.

**OAK-LEAF LACHNUS**, \**L. quercifoliæ*. Light yellow; antennæ pellucid white, with a slender black annulus at the tip of each joint; fore wings with a blackish spot on the apex of each nerve and a deep black dot on the base of the curved apical nerve; stigma whitish. Length to tip of wings 0·15. On the leaves of the white oak. No. 855, male.

**WILLOW LACHNUS**, \**L. salicellis*. Black; tibiæ and base of the antennæ obscure pallid; base and costal margin of the fore wings yellowish-white. Length 0·08. On the young succulent twigs of willow trees. No. 856, male.

**ALDER-LEAF LACHNUS**, \**L. alnifoliæ*. Apple-green; antennæ greenish-white, with four black annuli; legs greenish-white, tarsi, knees, and line on the posterior side of the tibiæ black; wings hyaline, the three oblique nerves black. Length, 0·10. On alder leaves. No. 857, male.

**ELM LACHNUS**, *L. ulmi*, (Linn.) Syst. Nat. ii. 733. Solitary, on the under side of elm leaves. No. 858, male.

**POPLAR LACHNUS**, *L. populi*, (Linn.) Syst. Nat. ii. 736. On the under side of the young leaves of *Populus grandidentata*. No. 859, male; 860, larva.

## ERIOSOMA. LEACH.

**APPLE-TREE BLIGHT**, *E. lanigera*, (Hausman.) Illiger's Magaz. vol. i. p. 440. *Myzoxylus mali*, (Blot.) Mem. Soc. Agricult. de Caen, 1830, p. 38. On the bark of young branches of the apple, to which tree, in Europe, it has been a great pest. Commonly only solitary individuals are here found, and in but one instance, have I met with it clustered and covering a limb as described by foreign writers. No. 861, male.



APPLE-ROOT BLIGHT, \**E. pyri*. Black, more or less pruinose, with a tuft of cotton-like down on the tergum and commonly a smaller one on the head; fore wings hyaline, with a large black stigma and nerves, the externo-medial nerve hyaline towards its base; inner edge black from the base to the apex of the first nerve, hyaline beyond. Length, 0·20. Common on the wing in groves, in autumn. On the roots of a young apple tree brought me from a nursery, excrescences were observed, the crevices in which were found to be covered with small lice-like larvæ, among which some winged individuals occurred, which proved on examination to be this species, from which circumstance its habits are inferred and its name bestowed. No. 862, male.

ALDER BLIGHT, \**E. tessellata*. Dull bluish-black; tergum with the segments marked by strongly impressed lines and covered by white down in square checker-like spots. Length, 0·16. On the under side of branches of the alder, (*Alnus rubra*, Marsh.) crowded together and concealed beneath a dense covering of snow-white down. I have searched in vain for winged individuals of this species. No. 863.

BEECH-TREE BLIGHT, *E. imbricator*. Black; three last segments of the abdomen blue-pruinose; stigma brown; longitudinal nerve and a line on the middle of the inner margin black. Female (?) winged; abdomen fulvous, with a black spot on the disk; legs pallid. Larva pallid, with 2 fuscous dorsal stripes; posterior half of the abdomen covered with a tuft of cotton-like down, from which proceeds two longer and coarser filaments. Length, 0·22. On the under sides of the branches of the beech tree, covered with snow-white down. On the slightest jar of the branch, a shower of tiny drops of a water-like fluid falls from these insects. Having met with no description of the *E. fagi*, (Linn.,) or its habits, I am unable to ascertain whether that insect is dissimilar to ours. No. 864, male; 865, female (?); 866, larva.



**PINE-TREE BLIGHT**, \**E. strobil.* Black, pubescent, subpruinose; a dorsal row of white meal-like spots on the tergum; fore wings with the costal margin, the apical and two inner basal nerves, black. Length, 0·20. Common on branches of the white pine, giving to the bark of infested trees a peculiar black appearance. Belongs to a nondescript genus, intermediate between this and *Lachnus*. No. 867, male; 868, female.

**BRYSOCRYPTA. HALLIDAY,**

**WITCH-HAZEL BRYSOCRYPTA**, \**B. hamamelidis*. Males black, pruinose; wings hyaline; nerves brown; legs whitish; knees and tarsi black. Larva smaller, brown. Length, 0·09. Inhabits conical follicles on the upper surface of witch-hazel leaves; each follicle contains about a dozen individuals, and has a small orifice in the under surface of the leaf. No. 869, male; 870, larva; 871, its follicle.

**FAMILY COCCIDÆ.**

Our species of this family have not as yet been investigated in their living state. The dried shield-like bodies of the dead females have been met with on several of our indigenous trees. In addition to the species so abundant upon the apple-tree, and currently regarded as the *Coccus arborum-linearis* of Geoffroy, (specimen No. 872,) the following may serve as New-York examples of this family: The Willow Coccus, \**C. salicis*, is ferruginous with obsolete black spots, has an oval nearly hemispheric form, and measures 0·20 in length, (No. 873.) The Linden Coccus, \**C. tilie*, the largest of our species that have been observed, is ferruginous, hemispheric, and measures 0·24, (No. 874.) Both these species have the usual slit at the posterior end, and are wrinkled transversely.



( D. )

## B O T A N Y .

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From Prof. JAMES HALL.

DIRCA PALUSTRIS. Leather Wood. Specimens of the wood and bark.

From THOMAS RICH, of the schooner Commodore.

ARTOCARPUS INCISA, (Bread fruit.) A specimen of the shell of the bread fruit. From the West Indies.

From BENJ. MIX, of Albany.

BOVISTA CRANIIFORMIS, (D. Schweintz.) Cranium-shaped<sup>1</sup> puff-ball, fifteen inches in diameter. From Saratoga county.

From Dr. CHARLES MARTIN, U. S. Navy.

A NUT used by the Indians for burning, for the purpose of coloring the India rubber. From the Amazon river.

A NUTMEG inclosed within the inner husk or mace. From Martinique.

TWO NUTS, unknown.





( E. )

LIST

OF

MINERALS, GEOLOGICAL SPECIMENS AND FOSSILS.

ADDED TO THE

State Cabinet of Natural History,

FROM JANUARY 1, 1850, TO JANUARY 1, 1851,





# MINERALS.

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## DONATIONS.

From MILTON SHELDON, of Ellenville, Ulster county.

Four specimens of SULPHURET OF IRON, from the Shawangunk mountain, near Ellenville.

From THEODORE TEED, of Croton, Westchester county.

A large specimen of TOURMALINE, (Schorl.) From Croton.

A BAR OF IRON, made from ore found at Anthony's Nose.

From JOHN FITCH, Esq., of Troy, Rensselaer county.

A specimen of CALCAREOUS SPAR, taken from the tunnel of the Albany and Stockbridge railroad, near Canaan, Columbia county.

From FRANCIS SALTUS, Esq., of the city of New-York.

A specimen of GRAPHITE, from his lands in Essex county, N. Y.

From ARNOLD WOOD, of New Scotland, Albany county.

A specimen of BOG IRON ORE, colored by manganese, from the town of New Scotland.

From OSCAR WEIL, of Albany.

STELLATE CRYSTALS OF SULPHURET OF IRON, on green jaspery slate.

From THEODORE TEED, of Cortlandtown, Westchester county.

Specimens of PEROXIDE OF IRON, (*Limonite*) from Cortlandtown, Westchester county.

From ALFRED O. CURRIER of Troy.

PSEUDOMORPHOUS CRYSTALS of Specular Iron, imbedded in quartzose rock, from Chittenden, Vermont.

From Mrs. JANE VAN VECHTEN.

GALENA, from Illinois.

From ALMERIN MARKS, Esq., of Durham, Greene Co.

COPPER PYRITES. Two specimens; from Bristol, Connecticut.

GALENA, from Illinois.

SULPHURET OF IRON, from Lockport.

GREEN CARBONATE OF COPPER. Two specimens.

DOG-TOOTH SPAR. Two specimens, from Lockport.

From N. T. RAYNSFORD and ADIN W. DAINS, of Albany.

IRON ORE. From Fort Henry, Essex county.

From Doct. CHARLES MARTIN, of the United States Navy.

CARBONATE OF COPPER. From the mines of St Jago De Cuba.

YELLOW AND VITREOUS SULPHURETS OF COPPER. Five specimens.

From the mines of St. Jago De Cuba.

NATIVE COPPER. Two specimens. From the mines of St. Jago De Cuba.

SULPHURET OF IRON AND COPPER. From the mines of St. Jago De Cuba.

QUARTZ containing crystals of Sulphuret of Iron. From the mines of St. Jago De Cuba.

QUARTZ PEBBLE.

From Prof. JAMES HALL, of Albany.

RED OXIDE OF ZINC, WITH FRANKLINITE. From Franklin, N. Jersey. Four specimens.

MASSIVE FRANKLINITE. From Franklin, N. Jersey.

FRANKLINITE, CRYSTALIZED. From Franklin, N. Jersey.

FRANKLINITE AND CARBONATE OF LIME. From Franklin, N. Jersey.

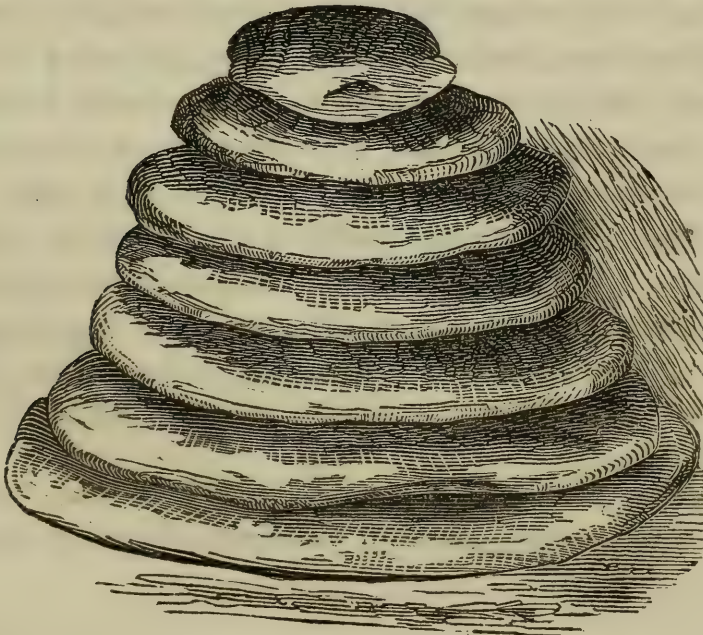
JEFFERSONITE. From Franklin, N. Jersey.

FROM WILLIAM H. GRANT, of Barrytown, New-York.

SEVEN LENTICULAR CONCRETIONS. From the black shale of the Hudson River group, quarried out in making excavations for the track of the Hudson river railroad, about four miles north of Stuyvesant Landing, Columbia county

These concretions are flattened, and were found piled upon each other horizontally, the larger one occupying the base and the smaller one the apex, thus forming a regular tapering upright cone. The diameter of the largest concretion is one foot, and of the smallest six inches ; and the aggregate height of all is eleven inches. A vertical nucleus appears to pass through the centre of the mass, around which the flattened spheroids were formed. The law of segregation, or rather molecular attraction, will explain and account for the formation of the several concretions ; but the general principle or law, which governed the whole mass, and produced symmetry of form and harmony of arrangement, is not fully understood, and is worthy of consideration.

The appearance of the spheroids as they were found imbedded in the shale, will be more fully comprehended from the following drawing :





The following communication of Mr. Grant describes the locality, &c., where the concretions were obtained :

“The concretions I forwarded a few days since, for the State Geological Cabinet, were found in the rock excavations for the Hudson River Railroad, about four miles north of Stuyvesant (Kinderhook) landing. They were imbedded in the rock (the common black shale of the Hudson river group) from twelve to eighteen feet below the surface, on the face of a ledge, and were loosened and partly removed by a blast. The rock at this locality has the usual dip to the east of  $45^{\circ}$  or more, but that immediately surrounding the concretions is characterized by the warped and tortuous and rather loose stratifications frequently seen where a vertical surface for any distance is exposed. It is also rather moist, and fifteen or twenty yards distant so wet as to be difficult of blasting.

I was not present when these specimens were first exposed ; but, on careful inquiry, find that the foreman and laborers at work on the spot, concur in saying that they were in a horizontal position, resting on each other, the largest at the bottom, and tapering upward in the conical form in which they were packed when sent to the Geological rooms. Whether these constitute the whole of the series, or whether they belong to the same series or not, I am unable to say, as there were several others, numbering in all perhaps 25 or 30, thrown out at the same time by blasts that were, unfortunately, broken, and many of the fragments lost. Whatever may have been the number in the series, from the best evidence I have, they were placed independent of the stratifications of the rock, the layers nearly or quite horizontal, and diminishing symmetrically in size from the base to the top. The broken pieces that I have obtained, and one specimen entire, present a more symmetrical appearance than those which I have sent, and the stem-like formation in the centre which apparently connected them together, is more clearly marked.

As these are the first concretions of the kind that I have discovered in the course of several years experience in the excava-

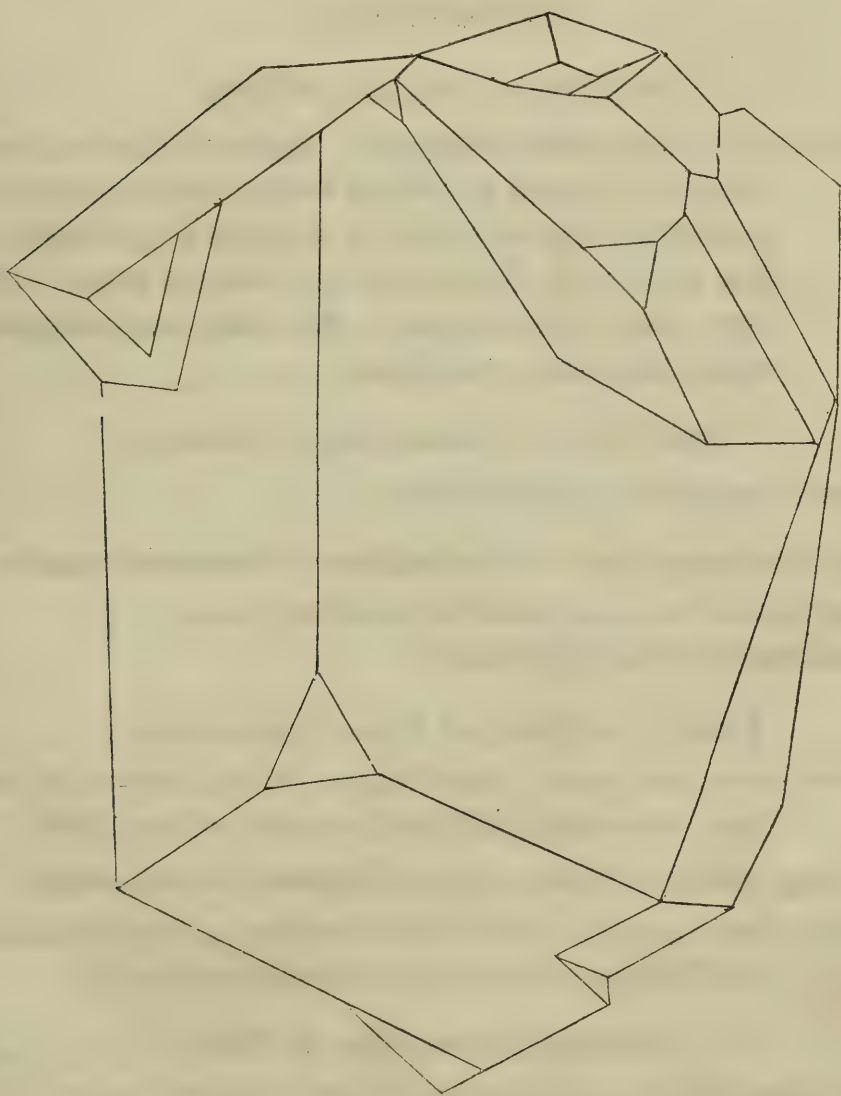
tion of work of a similar description, I have deemed them of sufficient interest, though not much versed in the subject, to present them to the State Cabinet of Natural History.

WILLIAM H. GRANT.

FROM SULLIVAN BOULTON, Esq., of Church's Mills, St. Lawrence County.

A CRYSTAL OF CALCAREOUS SPAR, from Gouverneur, St. Lawrence county.

This crystal is more than a foot in diameter, and weighs seventy-five pounds.



# GEOLOGICAL,

INCLUDING FOSSILS.

---

## DONATIONS.

From HENRY ROUSSEAU, of Troy.

HYPERSTHENE, with imperfect Garnets. Broken from a boulder of 1,000 lbs. lying in the Water Works' creek in the north part of the city of Troy, on the side hill, nearly one mile east of the Hudson river. Rock in place, in the north part of Lewis county, 200 miles northwest from where the boulder was found.

From PHILIP W. GROOT, Esq., of Albany.

FOSTER'S GEOLOGICAL CHART AND KEY.

From THEODORE TEED, of Cortlandtown, Westchester county.

A specimen of GRANITE, from Cortlandtown; also,  
A specimen of GNEISS, (polished.)

From J. A. HURST, of Utica, Oneida county.

A piece of "TABLE ROCK," from Niagara Falls; broken off from that portion which fell in the month of June, 1850.

From ALMERIN MARKS, Esq., of Durham, Greene county.

Several rock specimens from the Hamilton group, containing petrifications of *Delthyris mucronata*, *atrypa*, &c.

From JOHN FITCH, Esq., of Troy.

Two specimens of LIMESTONE, from John I. Budd's quarry, Scho-dack, Rensselaer county.



From Prof. JAMES HALL, of Albany.

Cast of a portion of the lower jaw of PALÆOTHERIUM.

The original was found in the tertiary formation of the valley of the Upper Missouri.

*By Purchase.*

HOMALONOTUS DELPHINOCEPHALUS, (Hall.) Fossil from the Niagara Group, Lockport.

# LIST

## OF

### MINERALOGICAL AND GEOLOGICAL SPECIMENS,

RECEIVED FROM

FRANKLIN B. HOUGH, A. M., M. D.

OF SOMERVILLE, ST. LAWRENCE COUNTY, N. Y.

The following is Dr. HOUGH's description of the specimens :

Nos. 1 to 20. CALCAREOUS SPAR. Found associated with Pearl Spar at a new locality on the banks of the Oswegatchie river, near the village of Church's Mills, Rossie, St. Lawrence county.

Several interesting crystalline forms have been observed here, some of which are believed to be new, or at least not hitherto found in this State.

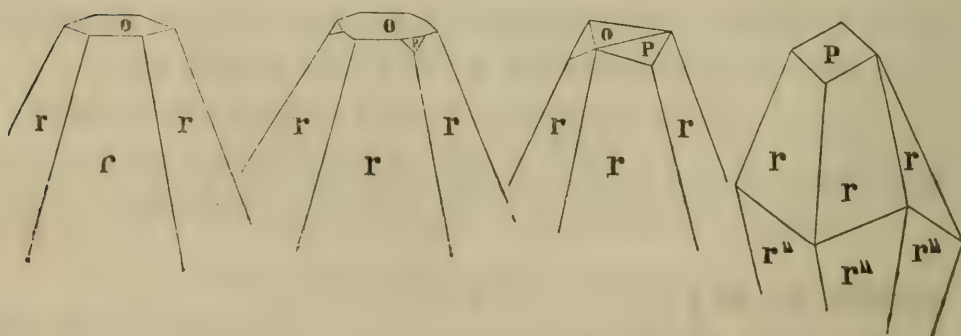
The accompanying figures represent several modifications.

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.



Figs. 1, 2, 3, represent modifications of the pyramid of the scalene dodecahedron, in which the summit is replaced by a single hexagonal plane, perpendicular to the axis of the crystal. In fig. 2, every alternate solid angle at the summit, is replaced by a plane with cleavage parallel to its surface, and therefore a part of the primary rhombahedron. In fig. 3, these planes are enlarged so as to reduce the terminal plane to a triangle, and in fig. 4, this plane is entirely destroyed, and the crystal presents the usual form of the *binnaire*, of Haüy, or a scalene dodecahedron with a summit of three rhomboidal faces. The measurement of these planes are calculated as follows: O. on R.,  $113^{\circ} 17'$ ; O on P.,  $142^{\circ} 14'$ ; as derived from the measure of the angles P. on R., and R. on R., as given in the State report on mineralogy, page 219. All of these forms occur in the specimens transmitted to the State collection. It is very probable that actual measurement might give different angles from those calculated above.

Fig. 5.

Fig. 6.

Fig. 7.



Figs. 5, 6, 7, represent modifications observed in the pyramid, by the extension of some of the planes, and the extinction of others.

Fig. 8, represents a common form at the locality. The reëntrant planes indicate its compound character. When but partly developed, it presents in certain positions the appearance of a low four sided pyramid. In some instances the pyramid is modified by six additional planes which make the summit a little more obtuse, as is represented in fig. 9.



Fig. 8.

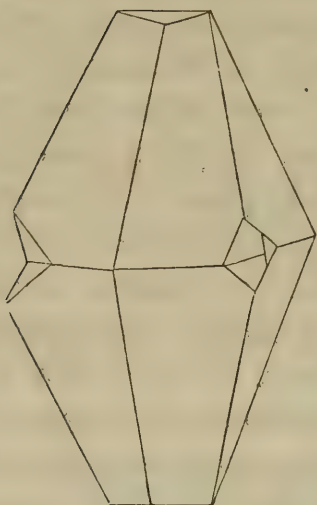
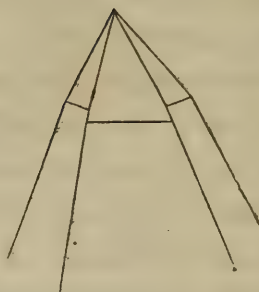


Fig. 9.



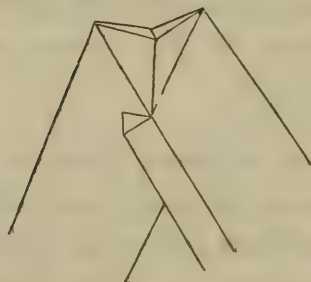
21. CALCAREOUS SPAR. Gouverneur, St. Lawrence county.

It occurs imbedded in clay, and is very compact. One crystal from this locality was more than a foot in diameter, and weighed seventy-five pounds. This has been presented to the State Cabinet by Sullivan Boulton, Esq., the finder.

22, 23. FOSSILS OF THE CHAZY LIMESTONE. Found in a boulder.  
The parent rock of this mass cannot be less than 70 miles distant.

24 to 29. CALCAREOUS SPAR. Vrooman's Lake, Antwerp, Jefferson county.

Fig. 10.



The crystalline forms observed at this locality are intermediate between the primary rhombahedron, and the hexahedral

prism with low, three-sided pyramids as terminations. Great similarity exists among the crystals of this locality, and the accompanying sketch, fig. 10, represents a very prevalent compound form.

30. POTSDAM SANDSTONE, with lines apparently of stratification, crossing it in two directions.

31. SPINELLE. This mineral occurs in Rossie, near Somerville, associated with chondrodite, graphite, &c., in white limestone.

32, 33, 34, 35. CHONDRODITE. Locality of preceding.

This mineral, hitherto rare in northern New-York, was found in great quantity in the spring of 1850, in white limestone, with its usual associates of spinelle and small quantities of graphite.

It is disseminated throughout a ledge of white limestone, and exists in great abundance. The locality is three-fourths of a mile W. N. W. of Somerville village, on the land of Mr. Alfred Day. The mineral occurs of various shades of yellow and orange, sometimes inclining to red. The spinelle is of a dull reddish tinge, and in small crystals translucent. The largest crystals observed ( $\frac{3}{4}$  of an inch on a side) were opaque, but the faces of the crystals are usually smooth and bright.

The singular association of these minerals has been observed in Orange county, and other sections of the Union. This is the first abundant locality observed in St. Lawrence county. See State Mineralogy, page 282.

36 to 39. PEARL SPAR. Associated with calcareous spar, (No. 1-20.) Rossie.

40, 41. SPHENE. Found in a hornblende boulder, associated with crystals of the latter minerals. Rossie, St. Lawrence county.

42. CRYSTALIZED CAST IRON. From the furnace of Messrs. Skinner and Blish, Church's Mills. Rossie.

This most interesting specimen, with three or four others, was produced in the fall of 1849, by the concurrence of numerous circumstances which seldom coincide. Having shown this formation to numerous practical founders and iron manufacturers, and

to several distinguished chemists, none of whom had ever seen anything like it before, I am inclined to believe the specimen to be *unique*.

It formed on the inside of a cavity made by the escape of liquid iron, as the "pig bed" was broken up, soon after casting from the furnace.

The ore was derived in part from the Sterling iron mine in Jefferson county, which ore has for one of its associates the sulphuret of nickel. Fragments of the carbonate of iron, specular ore, and the other minerals from this locality afford traces of *nickel* when carefully tested, and it may be probable that cast iron made from this ore is in reality an alloy of nickel and iron. A partial examination was made of this ore, and the iron from it by Mr. S. W. Johnson, in the laboratory of Yale College. A thorough analysis will be made at a future time.

It is well known that those meteoric masses of native iron which have been examined chemically, have nearly uniformly been found to contain nickel; sometimes it is as high as twelve per cent, and that they possess a remarkable crystalline structure.

I have been able to find but two authentic analyses of metallic ærolites which did not possess a crystalline structure.

The crystalline structure in these specimens is seldom apparent externally, but becomes so by polishing and etching with acids.

The crystalline forms presented in the cast iron, are the tetrahedron and octahedron with their surfaces and their edges bristling with points, which, when examined by a lens, appear to be themselves fringed with smaller and more delicate needles, at right angles with the axis to which they are attached, and gradually diminishing in length as they approach its point.

43. CRYSTALIZED SPECULAR IRON, from the farm of Joel Smith, Governor, St. Lawrence county.

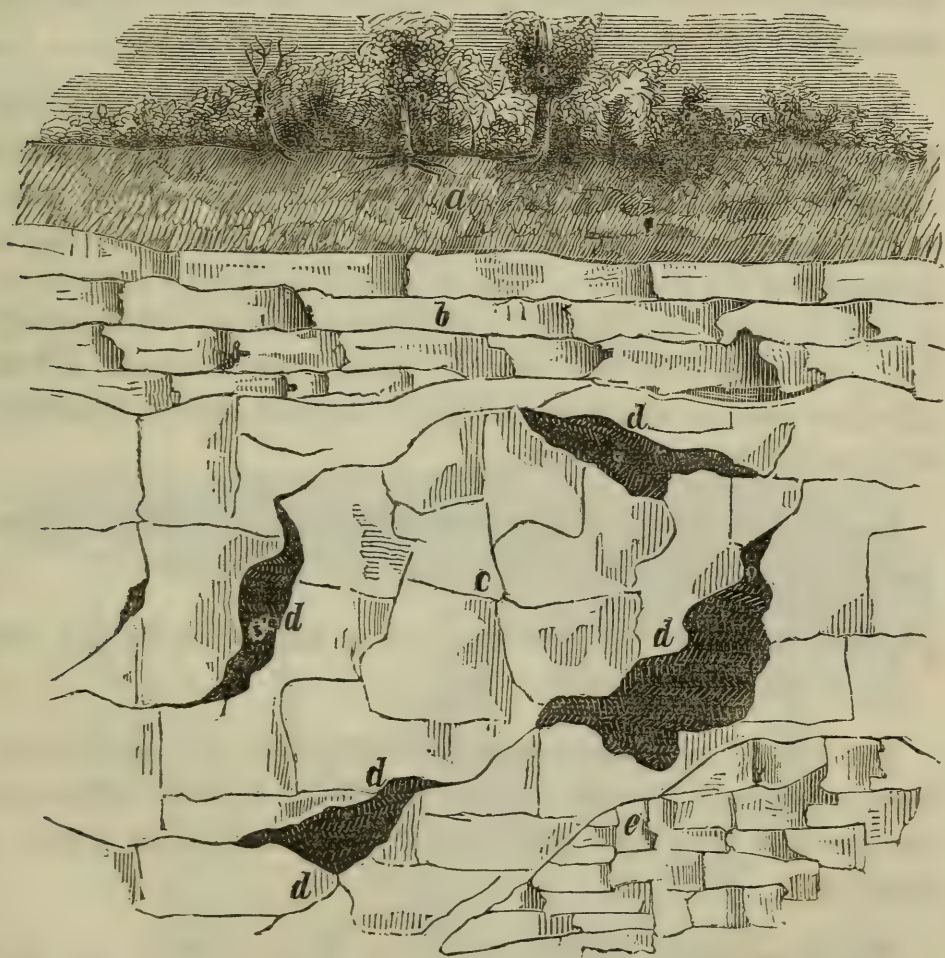
Mining operations have been commenced at this locality, and one or two tons of the ore have been raised. The rock in which it occurs (primary limestone) has never in this section of the



State proved a valuable repository for metals, and the workings will doubtless be shortly abandoned. The ore is associated with quartz, (No. 44,) carbonate of lime in crystals and incrustations upon other minerals, (No. 45) and a reddish brown calcareous spar, (No. 46) which presents curved and broken surfaces on cleavage.

The white limestone which furnishes this ore, is overlaid at this locality with Potsdam sandstone, thus furnishing one instance in addition to the many I have observed in this vicinity, proving at least the *relative age* of the two formations, although it affords no criterion by which to decide the disputed question of their *origin*.

As the relation of the rocks and the ore is somewhat interesting, I insert a figure to represent them.



REFERENCES.

- a. Soil. b. Potsdam sandstone.  
c. White limestone.

- d. Iron ore deposited in strings and masses through the rock.
- e. Red and coarsely crystalline limestone.

47. SPECULAR IRON ORE, of a soft sectile texture, like red chalk, from the farm of James Morse, Gouverneur, St. Lawrence county.

This place has also been recently wrought for iron ore, and several tons of a quality like this, and No. 48, (more silicious and gritty) have been procured. It is in and under Potsdam sandstone, and appears to exist abundantly. The sandstone of this vicinity is in many places highly colored with iron, which renders it harder and less liable to decay upon exposure. The surfaces of the rock appear every where studded with projecting masses of this ferruginous mixture. No. 49 represents one of these masses.

In the immediate vicinity of this locality, and in the same field, is a deposit of SCALY IRON FROTH, (No. 50.) of an extremely unctuous character, and dark red color. It possesses but slight cohesive properties, and has been used with great advantage in diminishing the friction of wagon wheels and heavy machinery. It may be used successfully in sharpening razors, polishing cutlery, imparting a metallic coat for electrotype purposes, and for all other uses to which plumbago is applied, except where the color would be an objection.

It occurs in white limestone and apparently in large quantities, associated with the following :

51, 52. SULPHATE OF BARYTES. Of a highly crystalline and cleavable variety.

The color is snow white when not stained by the iron; in some cases it is nearly transparent, and in others it is filled with angular cavities from the high crystalline development which it exhibits.

The edges of the plates which form the cavities do not often present crystalline planes, yet several have been observed which besides the more common forms represent the modifications represented in the following figures: (11, and 12.)



Fig. 11.

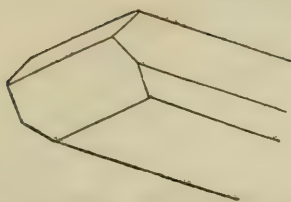
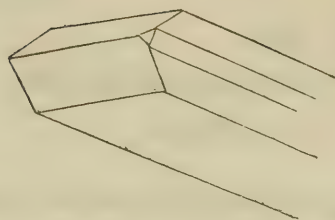


Fig. 12.

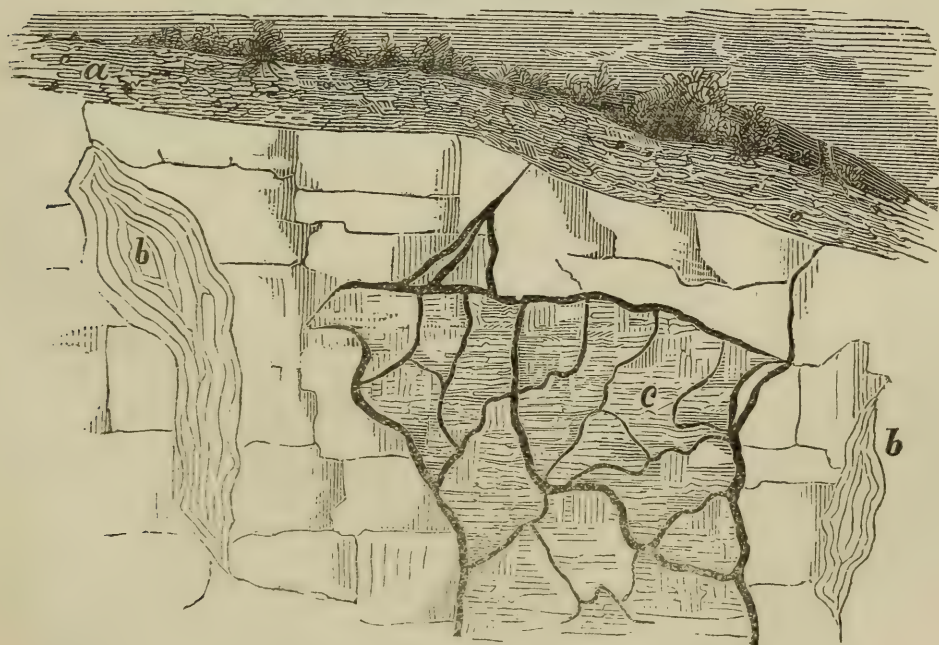


The surface often presents a columnar appearance, as is represented in specimen, No. 53.

Besides this mineral, there is found with the micaceous ore, a hard silicious mineral, of dark color, and conchoidal fracture, (No. 54,) a porous and stratified variety of the same, (No. 55,) and a white spongy mass (No. 56,) apparently the heavy spar partially decomposed by exposure to the weather.

57. DARK GREEN SERPENTINE. Associated with the rock in the vicinity of the above locality.

The iron froth and the heavy spar of the locality above described, appear to occupy separate veins, which vary constantly in width, and change in character within short distances. Their relation is shown in the following section :





## REFERENCES.

- a.* Soil.
- b.* Sulphate of Barytes.
- c.* Iron foam.

The evidences of igneous agency at this locality are decided, as the limestone near the ore appears to have been calcined and partially vitrified by heat.

( F. )  
ADDITIONS  
TO THE  
HISTORICAL AND ANTIQUARIAN COLLECTION,  
IN THE  
STATE CABINET OF NATURAL HISTORY,  
(BY DONATION AND PURCHASE,)  
From January 1, 1850, to January 1, 1851.





## DONATIONS.

From the Hon. ASA WILCOX, of Danube, Herkimer co.

STONE CHISEL.

From L. R. HOUGH, of Martinsburgh.

STONE CHISEL, made of greenstone.

Large SPEAR HEAD, made of chert.

From S. A. DEWEY, of Martinsburgh.

Fragments of ancient POTTERY.

Four chert ARROW HEADS.

From PETER B. NOXON, M. D., of Watervliet.

STONE PESTLE, used in pounding maize. Found in the town of Niskauna, Schenectady county.

From THADDEUS CHEESEBRO, of Guilderland, Albany co.

Two chert and one white quartz ARROW HEADS. Found in the town of Guilderland, Albany county.

From S. W. ROCT, of Cooperstown, Otsego county.

A chert ARROW HEAD. Found in digging a cellar on the shore of Otsego lake.

From THEODORE TEED, of Croton, Westchester county.

Indian ARROW HEAD. Found in Croton, Westchester county.

Three fragments of Indian POTTERY. Found in Croton.

From HENRY B. NORTHUP, of Sandy Hill, Washington co.

A very singular specimen of Indian workmanship, made of novaculite. Found in the town of Hartford, Washington county.

FROM JAMES MEADS, of Albany.

A copper Mexican GRAPE-SHOT. From the battlefield of Buena Vista.

A mass of SPARABLES, cemented together by heat. From the great fire in the city of Albany, on the 17th day of August, 1848.

A mass of TACKS, cemented together by heat. From the great fire in the city of Albany, on the 17th day of August, 1848.

FROM LEMUEL STEELE, of Albany.

TACKS, cemented together. From the great fire in the city of Albany, on the 17th day of August, 1848.

FROM ROBERT REID, of the Island of St. Lucia, West Indies.

A specimen of COCOA-NUT WOOD, (turned.) From the Island of St. Lucia, West Indies.

FROM MISS CAROLINE LOVETT, of Albany.

An antique LOOKING GLASS, set in a frame of sandal wood.

FROM the Rev. MILES BRONSON, of Assam, in India; Missionary from the American Bap. Missionary Union.

A SILVER COIN, "one rupee," (value 48 cts.) Issued by the East India Company, 1840.

A COPPER COIN, "one quarter anna," (value  $\frac{1}{4}$  of a rupee.) Issued by the East India Company.

A native East Indian COPPER COIN.

FROM RICHARD H. PEASE, of Albany.

Gä-o-wo gus-nuh. Bark Canoe. A model.

Gä-gä-we-sä. Paddle. 4 specimens.

Ya-yeh-gwä-dä-quä. Segar case.

Ya-yud-dos-hä-quä. Card receiver. 2 specimens.

Gä-gwih-sak-tah Yä-dä-gwah. Watch case.

FROM the Rev. A. HEMENWAY, Missionary at Bangkok, the capital of Siam.

A SILVER COIN, (Fuang,)  $7\frac{1}{2}$  cents. From Siam, in India.

FROM HIRAM H. COOPER, of Camden, Oneida county.

A SILVER COIN. Date 1652, on one side "New England," on the reverse, "Massachusetts;" commonly called *Pine-tree shilling*.

FROM MRS. M. ELIZABETH BALDWIN, of Saratoga county.

A BELT INTERWOVEN WITH BEADS, AND A GAME-BAG. These articles were taken from a vault in Peru, South America, in the year 1830. They had been deposited with the remains of an Indian Chief, a hundred years previous.

A BILL OF THE CONTINENTAL CURRENCY, for sixty dollars, issued according to a resolution passed by Congress at Philadelphia, Sept. 26, 1778.

A BILL OF THE VIRGINIA CURRENCY, for seven hundred and fifty dollars, issued according to an act of the Assembly, passed March 1, 1781.

FROM THEODORE TEED, of Cortlandtown, Westchester Co.

A large STONE AXE.

A STONE CHISEL, made of greenstone.

An unfinished chert ARROW-HEAD

A STONE PESTLE, made of sandstone.

A fragment of an INDIAN BOWL, made of steatite, (soapstone.)

These articles were found in Cortlandtown, Westchester Co.

FROM ASA FITCH, M. D., of Salem, Washington county.

RELICS of the battle at Wallomsac, N. Y., commonly called "Bennington battle." Within the fortification thrown up by Col. Baum, a single oak tree was left standing. The PIECE OF WOOD presented to the State Cabinet, is from the decaying stump of that tree. Sunk in it is a box containing a BULLET, found about forty rods north from the tree, in the direction whence, Gen. Stark, it is said, made his attack. The bullet is from N. Burnet, Esq., proprietor of the grounds, who picked it up when plowing, about ten years ago. Vestiges of this battle, formerly found in abundance, are now exceedingly rare, and all traces of the breastworks, &c., are entirely obliterated.



From AARON VAN ALLEN, of Stuyvesant, Columbia county.  
Eleven chert ARROW HEADS, found in Stuyvesant.

From MRS. S. M. LANSING MERCHANT, of Albany.  
A CANNON BALL, found near the junction of the Battenkill with the Hudson river, on the farm where Burgoyne erected a breastwork, &c., during the revolutionary war.

From A. MARKS, Esq., of Durham, Greene county.  
Several chert ARROW HEADS; also fragments of human BONES and INDIAN POTTERY, obtained by Mr. Marks from an ancient Indian burying ground on the banks of Connecticut river.

From CHESTER C. MOORE, of Albany.

1. A MEDICINE POUCH, manufactured of Deer skin and beautifully ornamented with Porcupine quills, made by the Black-feet Indians of Oregon.
2. A string of STONE BEADS, obtained from the Black-feet Indians of Oregon, and supposed to have been obtained by them from the Russian traders.
3. A flint ARROW HEAD, found in the Black-feet country, near the Rocky Mountains, where a battle had been fought between the Black-feet and Crow tribes of Indians.

From Doct. CHAS. MARTIN, of the United States' Navy.

1. A MACE OR WAND, made from the feathers of the Macaw or Toucan, carried in the hand by the chiefs of the Cannibal Indians of the Amazon river, 80 or 90 miles above Para, a city of Brazil.
2. A TUBE OR SHEATH made of woven strips of bark or reed, capable of enlargement and contraction. Used for the purpose of expressing the liquid from the arrow root in its preparation for use. From the Amazon river, 80 or 90 miles above Para, a city of Brazil.
3. TWO EARTHEN PIPES, of different style, with a wooden ornamental stem. From the Amazon river, 80 or 90 miles above Para, a city of Brazil.
4. GOURD. From the city of Isabel, Guatemala, painted in imitation of the ruins in that country.

FROM JOHN GEBHARD, Esq., of Schoharie.

No.

1. EGYPTIAN IMAGE, ten inches in length, made of the native Sycomore wood, in the form of a mummy case; painted and covered with hieroglyphics. Images of this description are frequently found in mummy cases, and appear to be a representation, on a small scale, of the mummy itself. It is probable that they were used as a kind of household gods by the ancient Egyptians, and in that character interred with the possessor on his decease.
2. ETRUSCAN FIGURE, representing Pallas. This figure is made of baked clay, and placed upon a marble pedestal. Height, eight inches.
3. BRONZE BUST OF THE PRINCESS LUCILLE. Height, three inches above the pedestal.
4. BRONZE FIGURE of a Consul in his toga. Height, five inches above the pedestal.
5. ROMAN FIGURE IN BRONZE. Height, four inches.
6. BRONZE FIGURE OF A COW. Height, two inches above the pedestal.
- 7, 7. TWO BRONZE FIGURES OF SOOTHSAYERS OR ORACLES. Height, four inches above the pedestals.
- 8, 8. TWO BRONZE FIGURES OF EGYPTIAN PRIESTS. Height, four inches above the pedestals.
9. BRONZE FIGURE OF THE EGYPTIAN VENUS. Height, four inches above the pedestal.
- 10, 10, 10. Three varieties of FUNERAL LAMPS. These lamps are made of baked clay, and are of ancient Egyptian manufacture.

There is no description accompanying these interesting ancient relics, but they are evidently of Egyptian and Roman origin, and were probably used as household gods.

*By purchase.*

- Gä-yä-ah. Work-bag. Two specimens.  
 Da-ya-he-gwä-hus-tä. Hat-band of broaches.  
 An-yus-gä. Silver Broach. (Large variety.)  
 An-yus-gä. Silver Broach. (Smaller variety.)

AN INDIAN PIPE. Manufactured from the *steatitic pyroxene* of Prof. Lewis C. Beck. Found near Fort George, Warren county.

This relic presents the best specimen of Indian design and sculpture ever found in this State. It is three inches in height, and represents an Indian in a sitting posture, with his arms resting upon his knees. The back, constitutes the bowl of the pipe, at the lower extremity of which there is a hole for the insertion of a stem.

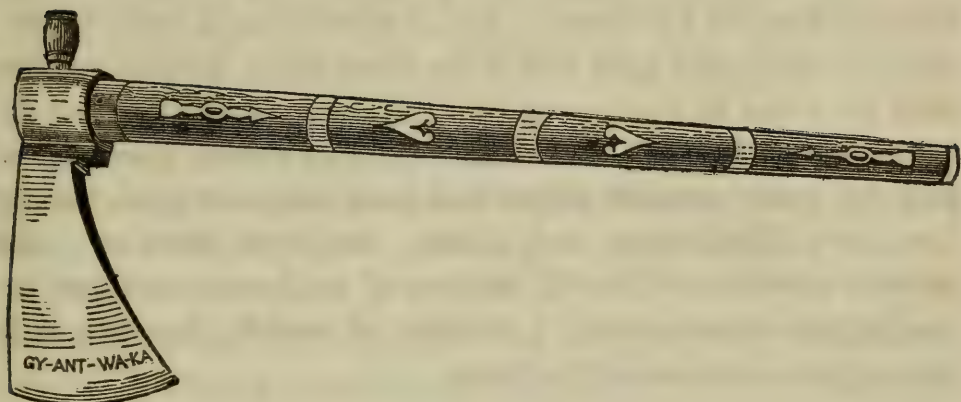
AN INDIAN RELIC, plowed up at the depth of a foot beneath the surface of the soil, in the town of Commerce, Oakland county, Michigan, in the year 1848.

This relic is made of *novaculite*, and in the form of an axe with two edges, with a hole in the centre for the insertion of a handle.

TOMAHAWK, which formerly belonged to the celebrated Indian Chief, CORNPLANTER.



( G. )



## THE CORNPLANTER TOMAHAWK,

IN THE STATE COLLECTION.

*To the Regents of the University :*

As the history of Cornplanter is already well known, it is unnecessary for me to relate any of the incidents of his life, except as they may be connected with the tomahawk.

Cornplanter was a Seneca by birth, and resided, after the American Revolution, upon a reserve in Pennsylvania, granted to him by the general government, in consideration, it is said, of his valuable services as a peace-maker between the Indian nations generally, and the people of the United States. During the Revolution, and for a long time subsequent, he enjoyed the rights and exercised the duties of a chief of the Seneca nation, and was for a long time known by the name of Gy-ant-wa-ka, or the Cornplanter, as the name literally signifies. He cultivated a large tract of land and became a considerable farmer, for which reason the name was bestowed upon him by the Senecas.

As a warrior, Cornplanter was daring and courageous, but not rash or impetuous. As a counsellor he was fearless and uncompromising in the advocacy of his views, yet his fearlessness and sternness were always tempered with discretion and prudence.

About the year 1810, Cornplanter, who was a firm believer in the Indian doctrines respecting the communication of men with the spirits of the other world, had a dream. His dream, as tradition preserves it, was, that he had had a sufficient time of service for the nation; that he was now grown too old to be of further use, either as a warrior or as a counsellor, and that he must therefore appoint a successor; and, further, that in order to preserve the continued good will of the Great Spirit, he must remove from his house all vestiges or relics of the workmanship and invention of white men. In obedience to this dream, Cornplanter took the many presents which had been bestowed upon him by Presidents Washington and Adams, and burnt them up. His presents consisted of the full uniform of an American officer, including an elegant sword, a number of medals, together with some other evidences of friendship.

It is customary among the Iroquois, when any one has had a dream, to announce the fact, and to request that some one might guess it. When the dream is guessed, then an interpretation is requested. This custom of guessing dreams is usually practised at their annual or New-Year's festivals. This course was adopted by Cornplanter in relation to the dream above adverted to. He wandered naked for three days from house to house, to find some one competent to guess his dream. Upon the third day having entered a house and announced the fact that he had had a dream, he expressed a desire that some one might guess it. The man of the house (John Crouse, a Seneca,) said that he would relate his dream, which he did, the substance of which is given above. Crouse seeing him naked and shivering with cold, said, "You shall henceforth be called O-no-no," (meaning cold.) This signified that his name and title of chief as Gy-ant-wa-ka, had passed away. Cornplanter acknowledged that it was truly and correctly guessed.

In obedience to his dream, Cornplanter immediately designated his successor. He chose an old and intimate friend, O-ya-wah-teh, (small berry,) known under the English name of Canada.

At that time Canada was a resident of the Tonawanda reservation, and Cornplanter communicated to him his determination of making him his successor by sending, as an evidence of his



selection and determination, the *tomahawk* now in the State collection, with a belt of wampum, as a token of his sincerity. By the belt and wampum as evidences of his right, Cornplanter requested that he might be installed as a chief under the name and title of Gy-ant-wa-ka. O-ya-weh-teh was, accordingly, raised up and installed as the successor of Cornplanter. He received the name of Gy-ant-wa-ka, and retained it until his death, which happened about the year 1835. Cornplanter, from his resignation until his death in 1836, was known under the name of O-no-no.

Upon the death of Canada, his effects were distributed according to the Indian custom, and his widow retained this tomahawk to keep as a family relic. She kept it until obtained from her by me. At the time I purchased it, she informed me that the wampum which was sent with the tomahawk by Cornplanter, had all been used for other purposes, and no part of it could then be had. The tomahawk, when received from Cornplanter, had in it a different handle from the present. She described it as being of better workmanship, with numerous silver ornaments upon each side. Upon one side was engraved the name Gy-ant-wa-ka; and upon the reverse the name of John Andrus, who was doubtless the manufacturer.

Although Cornplanter designated his successor, who was actually installed, and acted as a chief, Cornplanter was never in fact deposed. He ever had the privilege of sitting with the chiefs in council, and had a voice in their deliberations.

He continued to live upon his reserve, and died at an advanced age in 1836. His reservation was known and is yet distinguished by the name of Deo-no-sä-da-geh, signifying the "Burnt House."

All which is respectfully submitted.

Hä-sa-no-an-da.

ELY S. PARKER.

*Rochester, June 29th, 1850*

NOTE.—It was contrary to the custom of the Iroquois for a chief to resign his office and appoint his successor. But in this instance, out of reverence for his dream, a departure from their ancient customs was permitted.

E. S. P.







**INDIAN PAINTING** on the shore of the *St. Lawrence* opposite the village of *Oak Point*.  
Accompanying the paper on Indian antiquities by F.B. HOUGH.





Nº 6

**PLAN**

**OF AN ANCIENT WORK OF ART**

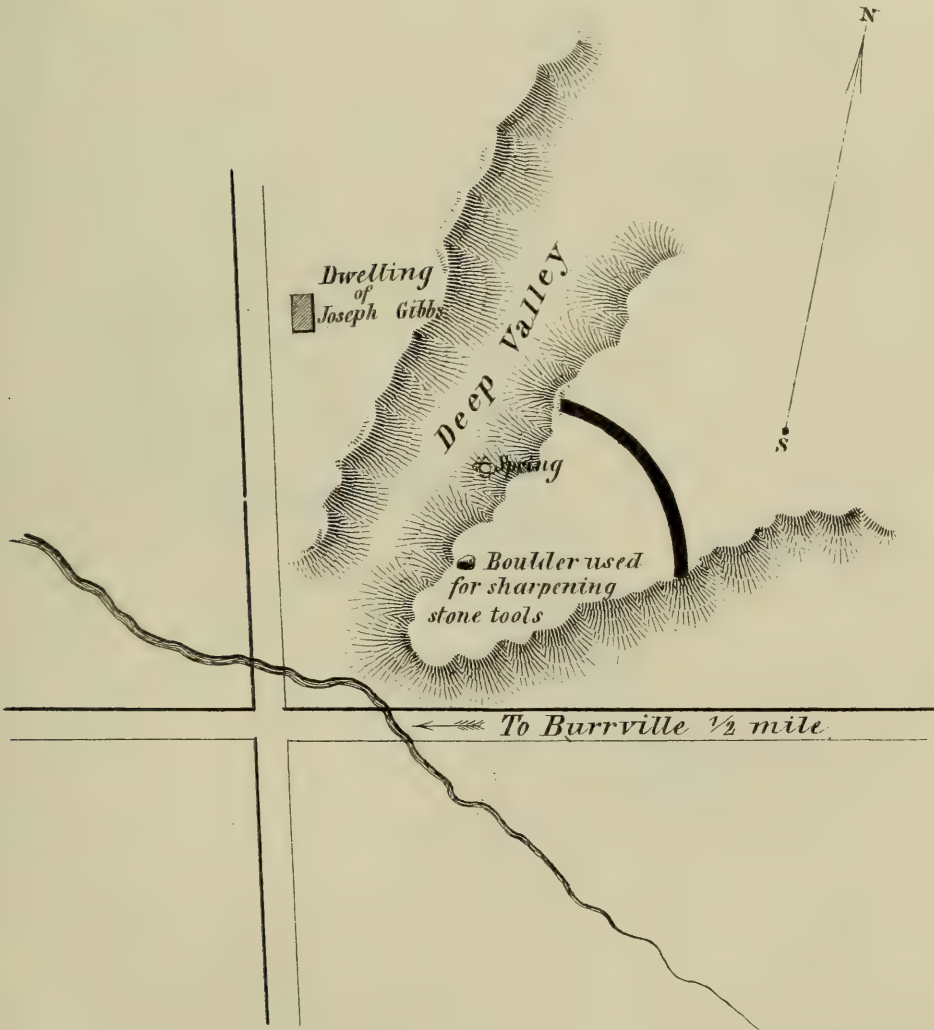
*in Watertown Jefferson Co.  
near the residence of Joseph Gibbs*

Visited June 1850

by

**F. B. HOUGH**

*Lith. of R. H. Pease Albany N.Y.*





Nº 7

PLAN

OF AN ANCIENT WORK IN WATERTOWN N.Y.

*On the farm of Asa Goodenough*

*Surveyed by E.B. Hough*

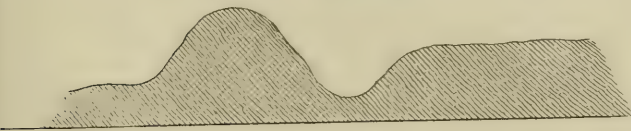
July 1850.

*Scale 3 Rods to the Inch.*

*Lith. of R. H. Pease Albany N. Y.*



*Section  
of the bank and external  
ditch in this work*



*Relative  
place of an ancient  
enclosure now gone  
about 60 rods  
distant  
from the other*





N<sup>o</sup> 8  
TRACE OF AN  
ANCIENT WORK

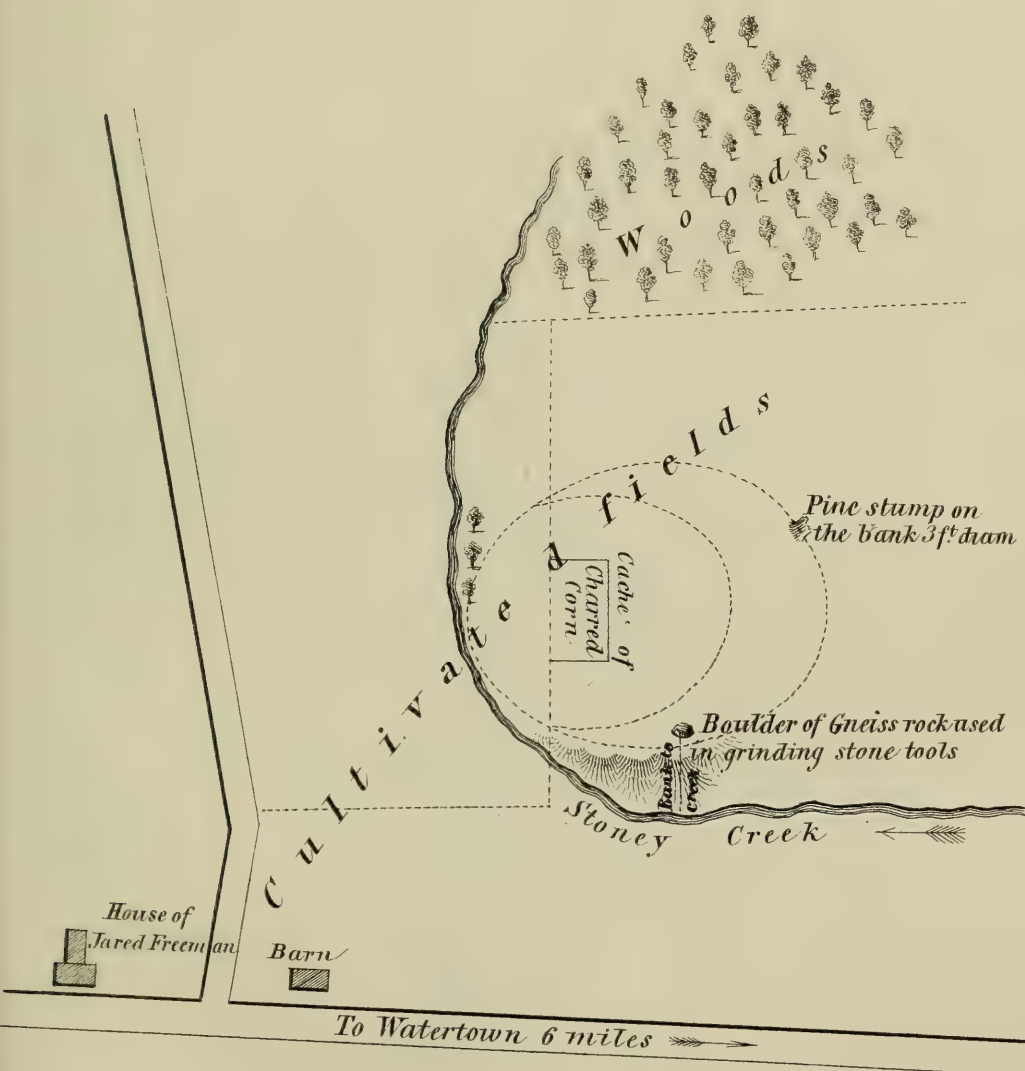
*On lot no. 2 in the town of Rodman Jeff. Co.  
near the residence of Jared Freeman*

Visited and Surveyed

JUNE 1850

BY FRANKLIN B. HOUGH M. D.

*Lith. of R. H. Pease, Albany N.Y.*







Nº 9

PLAN

OF AN ANCIENT TRENCH ENCLOSURE

in the town of Oswegatchie St. Lawrence Co.

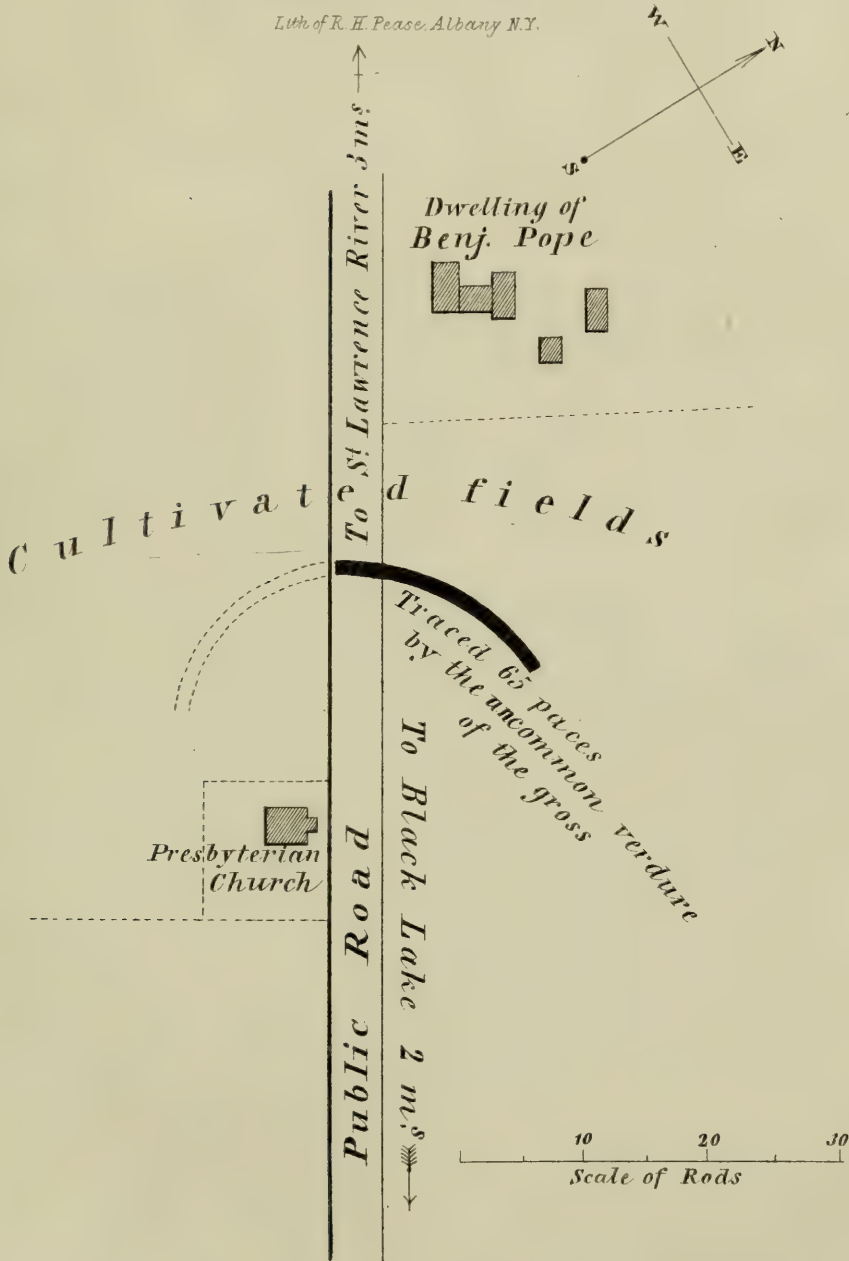
On the farm of *Benj. Pope*

Visited and Surveyed

June 1850

BY FRANKLIN B HOUGH M D

Lith of R. H. Pease, Albany N.Y.





(H.)

NOTICES OF ANCIENT REMAINS OF ART,

IN JEFFERSON AND ST. LAWRENCE COUNTIES

BY FRANKLIN B. HOUGH, M. D.,

OF SOMERVILLE, ST. LAWRENCE COUNTY.

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In addition to the remains of ancient works in the town of Leray, Jefferson county, described in the last annual report of the Regents, on the condition of the State Cabinet, page 101, the writer has been able to ascertain the existence of one or two others in that town, but now so obliterated that no trace remains. The principal of these was about five miles from the village of Watertown, near the red tavern, on the plank road to Evans' mills. It was situated on the margin of a small stream, a branch of West creek, (the same whose source is marked on plan No. 2, of my article of last year,) and in a level sandy plain at the western extremity of the *pine plains*, a strongly marked feature of this section of the country.

Nothing can be gathered concerning it, except that it was a nearly circular enclosure, and consisted of a low mound or ridge of earth, with gateways or intervals along its course at irregular distances. Some of the largest pine trees of the forest grew upon and within the bank. The neighboring fields formerly yielded the usual variety of fragments of pottery, and rude implements of bone, steatite and flint.

The present highway to Antwerp passes across the eastern margin of this enclosure, and the area is mostly occupied by houses and gardens. This work is in the immediate vicinity of the post-office, named Sanford's corners.



Remains of ancient art have been observed in three different localities in the town of Watertown, Jefferson county, all of which are situated on the brows of hills, or on elevated grounds above the level of the lake ridges. One of these is on the land of Wm. Lampson, near the residence of Joseph Gibbs, half a mile east of Burrville, and about a quarter of a mile from the town line of Rutland, on lot No. 31, of the township survey. It consisted of a crescent, running across an elevated ridge, the steep banks of which completed the enclosure, and would have rendered it a very suitable position for defence. No graves were found within or around it, and there is much reason to believe that it was a military work, belonging to a period long subsequent to that of many others in this section of the State. On the hill side is a spring of water, and within the enclosure is a large boulder of gneiss, which has been worn smooth and concave in places, by the rubbing of stone implements. On a point of land across the deep valley on the west, and directly opposite, I picked up a cast iron ball, weighing eight ounces. Several of these have at various times been found by the inhabitants, and this leads to the conjecture that they may have a connection with the history of the work.

With the exception of iron balls I have been unable to learn the existence of other metallic articles from this locality, although fragments and implements of aboriginal workmanship have been abundant. No trace of the original mound is now left, and the accompanying sketch, (No. 6,) was drawn under the direction of one of the early settlers who was familiar with it when the country was first cleared.

This site being on the line between Montreal and Onondaga, may we not reasonably conclude that this may have been a camp or station of the French, at the period when they occupied trading and missionary posts among the Iroquois, two centuries ago,

This inquiry can never be answered, and we are left to supply the history with such feeble assistance as may be drawn from a few scattered memorials.

On lot No. 29, in the town of Watertown, there formerly existed two trench enclosures. One of these was on the farm of

Anson Hungerford Esq., and is now entirely obliterated by the cultivation of nearly fifty years. Its place and relative position is represented in outline, on sketch No. 7, which accompanies this paper.

It is said to have resembled the work near it, had gateways or intervals along its course at irregular distances, and was surrounded by a ditch so deep that a team could not be driven across it without great difficulty.

A short distance from this, on the same range and lot, and on premises now owned by Asa Goodenough, is another trench still in perfect preservation, and by far the most distinct of any I have seen in northern New-York.

This locality is three miles south-east of Watertown village, on the summit of a gradually sloping natural terrace of Trenton limestone, in the edge of an open wood, and commands an extensive and pleasant prospect.

Elms three feet in diameter are found growing upon the bank, while within the enclosure are found the decaying remains of oak and other trees still larger.

In one place, on the south-western side, the bank is about six feet above the bottom of the ditch. A section of the bank, and plan of this work (No. 7) accompany this description.

In the north-western corner of the town of Rodman, Jefferson county, there formerly existed a remarkable enclosure, which by long cultivation has been obliterated. An outline of the work, as near as can now be known, together with a description, was furnished me by Mr. Jared Freeman, the owner of the land, who was familiar with its appearance when every part was entire. It occurs on lot No. 2, in a gently sloping field, near one of the small sources of Stony creek, and consisted of a double bank, with an intervening crescent-shaped space, and a short bank running down to the stream, which may have been the remains of a dam or a covered way to the water. Beaver dams are common on the stream, but this has not the appearance usually seen in them. Within the inner enclosure there was plowed up a large quantity



of corn, over an area of about one rod by eight. This was charred either by fire, or long exposure to the action of the elements, and must have been an immense grainery, or a *cache*, or hiding place for grain. It is estimated that there must have been several hundred bushels that were plowed out.

Charred corn was found nowhere else except at this particular spot, although the adjacent fields have furnished an unusual abundance of stone and earthen-ware fragments.

Just within the enclosure is a large boulder of gneiss rock of very hard texture, in which are seen two or three broad, shallow depressions, doubtless worn by the grinding of stone implements.

These smooth depressions were twelve inches across, and from one to two deep. No other part of the mass presents a smooth surface. Directly upon the mound there still stands a pine stump, which, although partly decayed, still has a diameter of five and a half feet, at a height of three feet from the ground. An outline of this work is represented in plan No. 8.

In the vicinity of Perch lake, in the town of Pamela, Jefferson county, near the mouth of a small stream known as Lowel creek, and on an estate commonly called the "Lafarge place," there formerly existed a number of earthen mounds, probably burial places, all of which, except one, have been levelled by cultivation.

The original number or exact locality of these barrows or tumuli, cannot now be ascertained. They may have numbered half a dozen, and were considered as objects of curiosity by the early settlers. The one now remaining stands on an elevated bank that gradually descends with an intervening plain to the lake shore, and commands a pleasant prospect. It is in the immediate vicinity of the mansion (now in ruins) built by Mr. Lafarge, the former proprietor of large tracts of land in the vicinity. It has a diameter of about thirty feet, a present elevation of three feet, with a depression in the centre, and is circular in form.

The relics formerly found in the adjacent fields indicate that this was anciently a favorite haunt of the aborigines. So far as



the writer could learn, no excavations have ever been made at this place to ascertain the existence of relics or bones in the mound.

A semicircular trench formerly existed in the town of Oswegatchie, St. Lawrence county, on lot No. 40, (western subdivision,) on the farm now owned by Benjamin Pope. A small portion in the present highway is the only part now visible, but on the first settlement of the country a complete semicircle could be very plainly traced. Within the bank was a ditch two feet deep. No bones have been found here, although an unusual abundance of earthen-ware fragments formerly occurred here.

Stone implements and flint arrows, also were frequently found in and around the work.

In this instance we observe a departure from the plan observed in most other works in this section of the State, in which a complete enclosure was formed, either by an artificial mound of earth, or in part by some natural barrier, as a stream, or the brow of a hill. In the present example none such existed, and the work consisted simply of an open crescent. A sketch of this work is represented in plan No. 9. Several other works remain to be described, particularly in Jefferson county, but the foregoing is all that the writer has been able to examine during the past year.

Connected with our primitive history, and forming a link in the chain of events that preceded our existence as a State government, are several specimens of rude painting upon the rocks on the Canadian shore of the St. Lawrence river, which although not within our territory, yet may belong to our history, and are here inserted.

They may hereafter be found to confirm or illustrate some recorded incident, and are examples of the symbolical records employed to preserve the memory of events.

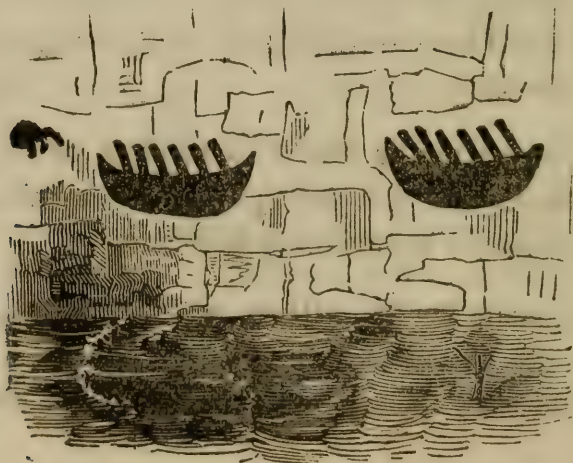
Directly opposite to the village of Morristown, and a little below Brockville, are two localities where paintings may be seen, They appear to have been executed in red ochre; are about three

feet above the average surface of the river in summer, and traced in the rudest manner upon the vertical face of the cliff. They are some fifty rods apart. The lower one represents a canoe with six individuals, and a cross as represented in the following sketch :



Every part is still very distinct. The cross is about twelve inches high, and the whole is drawn in that proportion. It evidently was the work of converted Indians, and cannot date back further than the period of the Jesuit missions in the seventeenth century.

Above this, and nearer the town of Brockville, are painted two canoes, each with six persons. The boats are about ten inches long, and have the relative size and distance represented in the following figure :



The left hand figure is blurred, and represents besides the boat an object that could not be determined. It is much like that in the figure.

More interesting than these, is a painting done apparently in vermilion, in Elizabeth township, C. W., about one fourth of a mile above the village of Oak Point, in Hammond, St. Lawrence county. It represents a batteau, or canoe, with thirty-five persons, and a cross. The cross is about one foot high, and the boat four feet long. The lines representing men (?) are strokes half an inch wide, and ten inches long, and it is like those above described, about three feet above the water's edge. A sketch of this, with the associated scenery accompanies this paper.





( I. )

ANALYSIS OF A SPECIMEN OF HEMATITIC IRON ORE.

BY J. H. SALISBURY, M. D.,  
Chemist to the New-York State Agricultural Society.

OLD STATE HALL, }  
ALBANY, Dec. 23, 1850. }

This ore occurs on the farm of H. I. Cruger, Esq., in Westchester county. It was furnished for analysis by T. Romeyn Beck, M. D. When applied as a pigment, it has somewhat the appearance of a bronze. It is easily pulverised to a great degree of fineness, has a greasy feel, and contains a small per centage of an oily unctuous body which is readily volatilized by heat. The following are the results of an analysis :

100 grains deprived of water, gave,	
Peroxide of Iron, .....	86.75
Silica, .....	7.50
Alumina, .....	2.30
Manganese, .....	1.95
Lime, .....	0.20
Magnesia, .....	0.05
Potash, .....	0.35
Soda, .....	0.15
Unctuous organic matter, resembling oil, ..	0.42
	<hr/>
	99.67

The oily matter has an aromatic odor resembling that of some species of laurus. When exposed to destructive distillation it passes off in white vapors, which are so pungent as to excite when breathed, coughing, and a sense of suffocation. When inhaled through the nose, they give rise to a sharp, burning pain of the Schneiderian membrane, which persists for some time after the inhalation.

MEM.—The above mineral is noticed in Lewis C. Beck's Mineralogy of the State of New York, 4to., page 30, under the name of Red ochre.





( K. )

References to various Writings relating to the Natural History of New-York, that have appeared during the year.

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## ZOOLOGY.

*Proceedings of the American Association for the advancement of Science. Second meeting.*

Page 409, A Monograph of the fresh water Cottus of North America. By Charles Girard.

*Annals of the Lyceum of Natural History. Vol. 5.*

Page 1. Observations on the Limosa Scolopacea of Say. By John Bell.

Page 4. Observations on the preceding paper by George N. Lawrence.

Page 9. Synopsis of the Coleopterous Insects of the group Cle-  
ridæ, which inhabit the United States. By John L. Le  
Conte.

*Journal of the Academy of Natural Sciences of Philadelphia. Vol.  
2. New Series. Part 1.*

Page 5. An attempt to identify the Longicora Coleoptera of the  
part of America, north of Mexico. By John L. Le  
Conte, M. D.

*Notice of the BLACK EGYPTIAN IBIS, by J. Barratt, M. D. From  
the Middletown (Conn.) Sentinel and Witness of May 21, 1850.*

BLACK EGYPTIAN IBIS—(a rare bird ;) called also, Glossy Ibis ;  
IBIS *falcinella*.

One of these rare birds, IBIS *FALCINELLA*, was shot at Middle-  
town, on the banks of the Connecticut, May 9th, time of a high

flood. It is a male in full plumage. Its length is twenty-eight inches,\* and stands 18 inches high, bill 5 inches long, which is slender and curved. It has been carefully preserved, and is now in the Cabinet of Dr. J. Barratt. By the papers, we learn, that a similar bird was shot at Freshpond, near Cambridge, Mass., on the 8th inst., and has been presented to the Harvard Cabinet of Natural History.

It is highly probable that these birds belonged to the same flock, and may have been driven to the South by the late storms, after crossing Behring's straits, having left the valley of the Nile, in March, as we suppose.

The *Ibis falcinella* is very rarely seen in the U. States. This is the first that has come to our notice on the Connecticut; and has not been known in this country many years.

The Prince of Musignano, was the first to show that the bird called *Tantalas Mexicanus*, by Mr. Ord, (the continuator of Wilson's Ornithology,) was the *Ibis falcinella* of Europe, a bird common in Egypt.

Mr. Nuttall, in vol. 2, p. 89, of his highly interesting work on American Birds, has given a full history of this species of Ibis, with a figure showing the Pyramids in the back ground. To this work we refer the reader (who has access to it.) Mr. N. says, "it is a periodical visitor of Egypt, where, in common with the sacred Ibis, it was revered and embalmed in the vast Catacombs of Saccara and Memphis. It arrives in that country in October, and leaves it in the month of March. They spread themselves into Russia, Siberia, Tartary, Denmark, and occasionally into Sweden, and perhaps Lapland, remaining in those countries till driven to migrate by the inclemency of the approaching winter; at which period they appear to arrive in Africa and Asia. It is a still more rare and accidental visitor to the United States."

"So highly was it honored, that the Ibis became the characteristic hieroglyphic of the country: repeated upon all their

\* Mr. Nuttall says, length 23 inches; this I apprehend is a typographical error for 28. Turton in Brit. Fauna, p. 55, says, length 2 ft. 6; extent of wings, 3 ft. 2; weight 18 ounces.



monuments, obelisks, and national statues. The abundance of their remains in the catacombs, proves indeed the familiarity, which the species had with the indulgent inhabitants of its favorite country. Diodorus Siculus says, these birds advanced without fear, into the midst of the cities. Strabo relates, they filled the streets and lanes of Alexandria to such a degree, as to become troublesome and importunate. The Ibis is now no longer venerated in Egypt, and is commonly shot and ensnared for food. The markets of the sea coast are now abundantly supplied with them and a white species, as game, both of which are ignominiously exposed for sale, deprived of their heads, a spectacle from which the ancient Egyptians would have recoiled with horror.

The person who shot the Ibis, at this place, remarked, "how tame it was." This confidence and easy familiarity with man, would render it entirely unfit for a residence in New-England, where there is such a murderous propensity to shoot the feathered race.

*Middletown, Ct., May 16, 1850.*

A bird of the same species, shot by Mr. Hurst, on Grand Island, in the Niagara, in August 1844, is now in the "State Cabinet." See third annual report, page 22.

## MINERALOGY.

*Silliman's Journal. New Series.*

Vol. 9, p. 287. On the discovery of sulphuret of nickel in northern New-York. By Franklin B. Hough, M. D. (Found at the Sterling iron mine, in Antwerp, Jefferson county, New-York.)

Vol. 9, p. 288. New mineral localities in New-York. By Dr. Franklin B. Hough.

PEARL SPAR, in Rossie, St. Lawrence county.

IDOCRASE, near Gouverneur, St. Lawrence county.

SULPHURET OF COPPER, near Vrooman's lake, Antwerp, St. Lawrence county.

SULPHATE OF BARYTES, in Gouverneur and Antwerp.

STALACTITIC QUARTZ, Parish iron mine in Rossie, and Sterling iron mine in Antwerp.



- Vol. 9, p. 424. On the existing mineral localities of Lewis, Jefferson and St. Lawrence counties, New-York. By Dr. Franklin B. Hough.
- Vol. 9, p. 430. Large crystals of sphene, (with figures,) obtained at Diana, near the Natural Bridge, Lewis county, New-York. Described by Wm. S. Vaux, of Philadelphia.
- Vol. 9, p. 449. Analysis of Oak Orchard acid spring water, Alabama, Genesee county, N. Y. By H. Errie and William J. Craw. (The results are heathen Greek to the uninitiated.)
- Vol. 10, p. 372. Optical examination of several American micas. By B. Silliman, Jun., M. D.
- Vol. 10, p. 383. Analysis of phlogopite, from St. Lawrence co., N. Y. By William J. Craw.

## GEOLOGY.

- Proceedings of the American Association for the Advancement of Science. Second meeting held at Cambridge, August, 1849.*
- Page 255. On some fossil remains, from Broome county, N. Y., By W. C. Redfield.
- Page 256. On the trails and tracks in the sandstones of the Clinton group of New-York; their probable origin, &c., and a comparison of some of them with *Nereites* and *Myrianites*. By Prof. James Hall.
- Page 347. On the brachiopoda of the silurean period, particularly the *leptænidæ*. By Prof. James Hall.
- Page 351. On graptolites, their duration in geological periods, and their value in the identification of strata. By James Hall.

( L. )

**CATALOGUE**  
**OF SPECIMENS OF THE ROCKS AND FOSSILS**

**IN THE GRAY SANDSTONE, MEDINA SANDSTONE, CLINTON GROUP,  
NIAGARA GROUP, ONONDAGA SALT GROUP, AND A PART  
OF THE WATER-LIME GROUP;**

**BEING A CONTINUATION OF THE CATALOGUE OF THE STATE GEOLOGICAL COLLEC-  
TION AS FAR AS THE FOSSILS ARE NAMED AND DESCRIBED :**

**By JAMES HALL.**





## TABLE CASE, No. 7.

1. ROOF SLATE. Rowley's Quarry, N. Lebanon, Columbia co.
2. SLATE. One mile west of Hillsdale, Columbia co.
3. GLAZED SLATE. One mile south of Hudson, at the supposed coal mine.
4. RED SLATE. Near Kinderhook creek, Chatham, Columbia co.
5. RED SLATE. One mile S. W. of Washington Hollow, Dutchess co.
6. MILLSTONE GRIT. Steel's creek.
7. SHALY SANDSTONE. With fragments of fossils.
8. do. do.
9. do. do.
10. SHALY SANDSTONE. With impressions of *Modiolopsis modiolaris*.
11. SHALY SANDSTONE.
12. CONCRETIONARY SANDSTONE.
13. GRAY SHALY SANDSTONE. Road,  $2\frac{1}{2}$  miles north of Rome.
14. GRAY SANDSTONE. Woodruff's, south of Rome.
15. GRAY SANDSTONE, SHALY. Woodruff's, south of Rome.
16. GRAY SANDSTONE. Woodruff's, south of Rome.
17. GREENISH GLAZED SLATE.
18. GRAY SANDSTONE. Salmon creek, Village of Florence.
19. do. do.
20. GRAY SANDSTONE. Falls of Stony Brook, Redfield.
21. GRAY SANDSTONE. Village of Florence.
22. GRAY SANDSTONE. With water marked surface. Falls of Salmon creek.
23. GRAY SANDSTONE. West of Oswego village.
24. GRAY SANDSTONE. Woodruff's quarry, south of Rome.
25. GRAY SANDSTONE. Below the dam on Mad river, Camden.
26. GRAY SANDSTONE. Dam at Mad river, near Camden.
27. GRAY SANDSTONE. Upper falls of Mad river, Redfield.

28. GRAY SANDSTONE. Road to Lorraine from Redfield.
29. GRAY SANDSTONE. 3 miles west of "Ghent Meeting-house,"  
Columbia county.
30. GRAY SANDSTONE. Road south of Rome.
31. GRAY SANDSTONE. Tippler's quarry.
35. GRAY SILICIOUS SANDSTONE. With shaly nodules, and containing galena. Columbia co.?
36. CONTORTED LIMESTONE.  $1\frac{3}{4}$  miles N. W. of Stand Pondville,  
Dutchess co.
37. MILLSTONE GRIT. Bloggs' Clove, Blooming-grove, Orange co.
38. COMPACT SANDSTONE. Two Ponds, Monroe, Orange co.
39. MILLSTONE GRIT, (BOWLDER.) Hamptonburgh, Orange co.
40. MILLSTONE GRIT. Deerpark, foot of Shawangunk Mt. range.
41. GRAYWACKE. 2 miles west of Woodbury; Monroe, Orange  
county.
42. MILLSTONE GRIT. Deerpark.
43. CONGLOMERATE. Canterbury., Orange co.
44. FINE GRAINED GRIT ROCK. Base of Shawangunk mountain,  
Rochester, Ulster co.
45. GRIT ROCK. Walls of the Shawangunk lead vein, Sullivan  
county.
46. MILLSTONE GRIT. Deerpark.
47. BRECCIA. 2 miles N. E. of Craigville, Orange co.
48. YELLOWISH SANDSTONE. Stockport Landing, Columbia co.
49. COMPACT SHALY SANDSTONE. Near HydePark, Dutchess co.
50. A METAMORPHIC SLATY AND CRYSTALLINE ROCK. ——?
51. COMPACT METAMORPHIC GRIT ROCK. ——?
52. BROWNISH SILICIOUS LIMESTONE, METAMORPHIC. ——?
53. COMPACT SHALY SANDSTONE.
54. SHALY SANDSTONE. With thin layers of shale. ——?
55. SILICIOUS LIMESTONE.
56. LIMESTONE. Blogg's Clove, Blooming-grove, Orange co.
57. LIMESTONE. Warwick, Orange co.

## IN VERTICAL CASE, No. 7.

58. GREY SANDSTONE. Three miles north of Salem, Albany Co.
59. BLACK SLATE. Hoosick, Rensselaer co.
60. LIMESTONE. West of Granville, Washington co.
61. LIMESTONE. Snake-Hill, Saratoga co.
62. do do
63. RED SHALE. Easton, Washington co.
64. SHALE. Sugarloaf, Orange co
65. do do
66. COMPACT SANDSTONE. Bellvale, Warwick.
67. RED SLATE. Blooming-grove, Orange co.
68. MILLSTONE GRIT, (compact.) Canterbury, Orange co.
69. RED SHALY SANDSTONE. do
70. RED SANDSTONE. Pine Hill, Cornwall, Orange co.
71. RED MILLSTONE GRIT. Carpenter's Point, Deerpark.
72. RED SHALE. Cambridge, Washington co.

## TABLE CASE, No. 8.

1. ONEIDA CONGLOMERATE. Steel's creek, Herkimer co.
2. do do
3. do do
4. do Cleveland, Oneida lake.
5. do Mason's quarry, S. W. of Utica.
6. do do
7. do Mansfield, S. of Hampton.
8. do south of New Hartford.
9. do Mason's quarry, S. W. of Utica.
10. do near Starch Factory creek.
11. do do
12. do Steel's creek.
13. do Mansfield, S. of Hampton.
14. MILLSTONE GRIT. On top of Hill between Ferguson creek  
and Starch Factory creek, near Utica.

## MEDINA SANDSTONE.

15. MEDINA SANDSTONE, gray beds. Lewiston, Niagara co.
16. do do
17. do with ripple marks. Lewiston, high bank  
of river.



18. MEDINA SANDSTONE, gray beds. Lewiston, Niagara co.
19. do with undulating lines of deposition.  
Martville, Cayuga co.
20. do Wayne co.
21. do Near Martville.
22. do Quarry N. of Martville.
23. do Mill below Martville, towards Hannibal-  
ville.
24. do Hulmes' quarry, Sterling, Cayuga co.
25. do with *Dictuolites Beckii*. Medina.
26. do upper mass Hulmes' quarry, Sterling,  
Cayuga co.
27. do upper mass. Cental's Mill, Wayne co.
28. do do do
29. do Hulmes' quarry, Sterling,  
Cayuga co.
30. do do
31. do near Martville.
32. do do
33. do upper gray mass. Medina.
34. do do Lewiston, Niagara co.
35. do do Rochester.
36. do variegated. Rochester.

## TABLE CASE, No. 9.

## MEDINA SANDSTONE.

1. MEDINA SANDSTONE. Sterling Centre, Cayuga co.
2. do do
3. do do
4. do do
5. do do
6. do Park's mill-dam, E. of Amboy Centre,  
Oswego co.
7. do with concretionary markings. Oswego  
village.
8. do with mud cracks. Oswego village.

9. MEDINA SANDSTONE, with *pleurotomaria pervetusta*. Medina.
10. do do
11. do with *Pleurotomaria pervetusta* and *Lingula cuneata*. Medina.
12. do with *Pleurotomaria pervetusta*. Medina.
13. do do
14. do do
15. do East side of Irondequoit bay.
16. do with *Palaeophycus tortuosus*. Vinton's quarry, Brighton, Monroe co.
17. do with *Lingula cuneata*. Medina, Orl. co.
18. do do
19. do do
20. po do
21. do do
22. do do
23. do with *Palaeophycus*. Medina.
24. do with *Modiolopsis primigenius*. Medina.
25. do with *fucoides*, —?
26. do do
27. do do
28. do do
29. do with *Arthropycus harlani*, (loose,) near Cleveland, Oneida lake.
30. do with *Arthropycus harlani*, Medina, Orleans co.
31. do near Sterling, Cayuga co.
32. do with *Arthropycus harlani*. Medina, Orleans co.
33. do with *Arthropycus harlani* and *Fucoides? auriformis*. Medina.
34. do with *Dictuolites Beckii*. Medina.

## VERTICAL CASE, No. 7.

## MEDINA SANDSTONE. (CONTINUED.)

35. MEDINA SANDSTONE, with *Lingula cuneata*, showing current markings. Lockport, Niagara co.
36. GEODE, MEDINA SANDSTONE. Lockport.
37. MEDINA SANDSTONE, upper gray layers. Medina, Orleans co.
38. do variegated. Rochester, Monroe co.
39. do Lewiston, Niagara co.
40. do upper gray layer. do
41. do conglomerate. Wolcott, Wayne co.
42. do with water markings. Lewiston.
43. do showing diagonal lines of lamination.  
Rochester, Monroe co.
44. do Martville, Cayuga co.
45. do inclosing nodules of shale. Rochester,  
Monroe co.
46. do with *Arthropycus Harlani*. Wayne co.
47. do variegated and shaly. Medina, Orl. co.
48. do shaly. Lewiston.
49. do Redfield, Oneida co.
50. do upper shaly layers. Medina.
51. do variegated. Lewiston.
52. do upper greenish shaly layers. Lewiston.
53. do do do
54. do upper gray layers, with *Cytherina cylindrica*. Medina.
55. do variegated. Near Martville, Hannibal,  
Cayuga co.
56. do variegated. Lewiston, Niagara co.
57. do Rochester, Monroe co.
58. do very shaly. Irondequoit bay, Monroe co.
58. do Medina, Orleans co.
60. do with *Lingula cuneata* and *Cytherina cylindrica*. Medina, Orleans co.
61. do with nodules of shale enclosed. Medina.
62. do do
63. do with *Lingula cuneata*. Lockport.
64. do do Medina.



65. MEDINA SANDSTONE, with *Lingula cuneata* and *Pleurotomaria pervetusta*. Medina, Orleans co.
66. do with *Lingula cuneata*. Medina.
67. do Clarendon, Orleans co.
68. do with tortuous lamination. Rochester.
69. do Shaly variety. Lewiston.
70. do do
71. do do
72. do Shaly. Rochester, Monroe co.
73. do do. Martville, Cayuga co.
74. do with *Cytherina cylindrica* and *Lingula cuneata*. Medina.
75. do with concretionary surface. Oswego.
76. do with *Arthropycus Harlani*. Medina.
77. do do Adams' Basin, Monroe co.
78. do with *Fucoides? heterophyllus*. Adams' Basin, Monroe co.
79. do with *Fucoides? heterophyllus*. Medina, Orlean's co.
80. do do
81. do with *Fucoides? heterophyllus*. Rochester, Monroe co.
82. do with fucoidal markings. Medina.
83. do do
84. do do Martville, Cayuga co.
85. do variegated. Phillipsburg, Oswego co.
86. do with fucoidal markings. Lewiston
87. do with *Arthropycus harlani*, and conglomerate. Oswego co.
88. do with *Arthropycus harlani*. Medina, Orleans co.
89. do with ripple marks. Medina, Orleans co.
90. do with *Arthropycus harlani*. Sodus, Wayne county.
91. do upper gray layers. Medina, Orleans co.
92. do do
93. do Medina, Orleans co.

## TABLE CASE, No. 10.

## CLINTON GROUP.

1. CONGLOMERATE, with shaly surface. Blackstone's quarry,  
New Hartford.
2. SHALY SANDSTONE, with *Buthotrephis palmata*. Blackstone's  
quarry, New Hartford.
3. do with *Rusophycus bilobatus*. Gaylord's and  
Norton's quarry, New Hartford.
4. do with *Buthotrephis gracilis*. Blackstone's  
quarry, New Hartford.
5. SANDSTONE, with *Beyrichia*. New Hartford.
6. CONGLOMERATE. Stebben's creek, near Clinton village.
7. do with iridescent surface. Blackstone's quar-  
ry, New Hartford.
8. OOLITIC IRON ORE. Bennett's ore bed, west of Clinton village.
9. do do
10. do do
11. do Wadsworth's quarry, New Hartford.
12. do with crinoidal joints. Eames' quarry,  
near Verona.
13. do with crinoidal joints. Parson's quarry,  
near Verona.
14. do Hammond's orebed, Westmoreland, Onei-  
da co.
15. do Parson's quarry near Verona.
16. do with *Leptaena sericea*. Bennett's ore bed,  
near Clinton village.
17. SHALY SANDSTONE, with *Leptaena sericea*. Saw mill, south of  
Verona, Oneida co.
18. LIMESTONE, with *Pentamerus oblongus*. Rochester.
19. do do
20. SILICIOUS LIMESTONE. do Wolcott, Wayne co.
21. LIMESTONE, with *Atrypa hemispherica*. Mill, below Martville,  
Cayuga co.
22. do with fragments of *Pentamerus oblongus*. Sodus,  
Wayne co.
23. OOLITIC IRON ORE. Rochester.
24. do upper beds. Stebbins' creek, Oneida co.  
(2 specimens.)

25. LIMESTONE, with *Leptaena rugosa*. Donelly's quarry, Madison.
26. OOLITIC IRON ORE. Wolcott, Wayne co.
27. do with fragments of shells. do
28. do with *Pentamerus oblongus*. do
29. do with *Spirifer radiatus*. do
30. do do Donelly's quarry, Madison.
31. FERRUGINOUS LIMESTONE, with *Pentamerus oblongus*. Donelly's quarry.
32. SHALY SANDSTONE, with *Rusophycus pudicus*. Gaylord's quarry, New Hartford.
33. do with *Rusophycus pudicus*. Gaylord's quarry, New Hartford.
34. *ATRYPA CONGESTA*. Reynale's Basin.
35. do *PLICATELLA*. do
36. SHALE, with *Graptolithus clintonensis*. Sodus.
37. LIMESTONE, with *Atrypa hemispherica*. Rochester.
39. do do *reticularis* and *Pentamerus oblongus*.  
Donelly's quarry, Madison.
39. GRAY SANDSTONE, upper mass of Clinton group, with fragments of *Homalonotus delphinocephalus*. Steel's creek, Herkimer co.
40. do upper mass of Clinton group. Steel's creek, Herkimer co.
41. SHALE, with *Atrypa congesta*. Reynale's Basin.
42. *Atrypa plicatella*. Reynale's Basin.
43. *Chatetes lycoperdon*. Reynale's Basin, Niagara co.
44. UPPER GRAY SANDSTONE, with *Modiolopsis ovata*. Remington's quarry, S. of Mohawk village.
45. LIMESTONE, with *Atrypa congesta*. Medina, Orleans co.
46. *Caninia bilateralis*. (2 specimens.) Reynale's Basin.
47. *Atrypa congesta*.
48. FIBROUS SULPHATE OF STRONTIAN. Stark, Herkimer co.
49. do With carbonate of lime, &c.  
Stark, Herkimer co.
50. CRYSTALIZED SULPHATE OF STRONTIAN. Stark, Herkimer co.
51. GYPSUM. do



## VERTICAL CASE, No. 8.

## CLINTON GROUP. (CONTINUED.)

52. SHALY SANDSTONE, with fucoidal markings. Blackstone's quarry, New Hartford.
53. SHALE, with obscure fossil markings. do.
54. GREEN SHALE. Martville, Cayuga co.
55. FERRUGINOUS SANDSTONE, with *Beyrichia*. New Hartford.
56. SHALY SANDSTONE, *Rusophycus subangulatus*. Blackstone's quarry, New Hartford.
57. do with fucoidal markings. do.
58. SHALE, with *Buthotrephis gracilis*. Near Clinton village.
59. SANDSTONE, with *Buthotrephis palmata*. Fox-Hollow, Herkimer co.
60. SHALY SANDSTONE, with Organic markings. Blackstone's quarry, New Hartford.
61. do with *Rusophycus bilobatus*. Gaylord and Norton's quarry, New Hartford.
62. SHALE, with fragments of *Buthotrephis ramosa*. Blackstone's quarry, New Hartford.
63. do do
64. SHALY SANDSTONE, with fucoidal fragments. Two miles S. W. of Verona.
65. CONGLOMERATE, with iron pyrites. Blackstone's quarry.
66. do with iridescent surface. do
67. do with shaly surface. Stebbin's creek, Oneida co.
68. do with shaly surface. Rogers' cr'k., Oneida co.
69. do Blackstone's quarry. New Hartford.
70. SHALY SANDSTONE, with fuicoidal markings. Near Clinton village.
71. do with fuicoidal markings. Clinton quarry, north of Martville.
72. SHALE. A quarry north of Martville.
73. SHALY SANDSTONE, with fucoidal remains. Quarry south of Clinton village.
74. HORNSTONE, composed of fragments of shells. Rochester.
75. SANDSTONE, with *Beyrichia*. New Hartford.

76. GREY SANDSTONE, with *Lingula oblonga*. Quarry north of Martville.
77. FERRUGINOUS SANDSTONE, with fragments of organic remains. New Hartford.
78. do Stark, Herkimer co.
79. do Steel's creek.
80. SHALY SANDSTONE. Van Hornsville, Herkimer co.
81. SHALY LIMESTONE. Bushnell's, Oneida lake.
82. do Quarry near Verona.
83. do with *Fenestella prisca*? Near Verona.
84. do do Martville.
85. do Martville.
86. GREEN SHALE. do
87. do Swift's creek.
88. LIMESTONE. Near Verona.
89. SHALY LIMESTONE. do
90. OOLITIC IRON ORE, with *Beyrichia*. Van Hornsville.
91. do Swift's creek.
92. do Bennet's ore-bed, near Clinton village.
93. do do
94. do with concretions and crinoidal joints. Pearson's ore-bed, near Verona.
95. RED SANDSTONE. Steel's creek.
96. RED CONGLOMERATE. Steel's creek, Herkimer co.
97. OOLITIC IRON ORE, with limestone. Wolcott Wayne co.
98. LIMESTONE, with *Pentamerus oblongus*. Sodus, Wayne co.
99. do do Rochester.
100. do do do
101. SHALE, with *Leptæna rugosa*. Donelly's quarry.
102. OOLITIC IRON ORE, with calcareous spar. Wolcott, Wayne co.
103. SHALY LIMESTONE, with *Fenestella prisca*. Taberg furnace.
104. SHALE, with *Atrypa plicatella*. do
105. do with *Beyrichia* and *Tentaculites*. do
106. OOLITIC IRON ORE, with fragments of fossils. Stebbin's creek, Oneida co.
107. do Stebbin's creek, Oneida co.
108. do with fragments of fossils. South of Clinton village.

109. OOLITIC IRON ORE. Quarry north of Clinton village.
110. do Hammonds' quarry.
111. do with *Phanopera constellata*. Wolcott, Wayne county.
112. do with sulphate of barata. Wolcott, Wayne county.
113. do with *Pentamerus oblongus*. Donelly's quar.
114. LIMESTONE, with fragments of fossils. Near Martville.
115. SANDSTONE, with iron pyrites. Stebbin's quarry, near Clinton village.
116. SHALY SANDSTONE, with casts of *Leptaena*. Near Blackstone's quarry, New Hartford.
117. FERRUGINOUS SANDSTONE, with cast of *Leptaena subplana*. Near Clinton village.
118. SHALY SANDSTONE, with *Leptaena rugosa*. Near Tippler's quarry.
119. SILICIOUS LIMESTONE, with *Leptaena rugosa*. Munger's quarry, O. L. P. O.
120. do with *Leptaena rugosa*. Oneida lake.
121. SILICIOUS AND SHALY LIMESTONE. Above the upper ore bed, Swift's creek, Oneida co.
122. SHALY LIMESTONE, with *Leptaena corrugata* and *Pyrenomæus cuneatus*. Clinton village.
123. SHALY SANDSTONE, with *Avicula emasculata*. Munger's quarry, Oneida lake.
124. do with imperfect fossils. Gaylord's quarry, near Utica.
125. do with *Rusophicus bilobatus*. Gaylord's and Norton's quarry, N. Hartford.
126. do do
127. do do
128. do with *Buthotrephis palmata*. Gaylord's and Norton's quarry, N. Hartford.
129. do with roots of marine plants.
130. GRAY SANDSTONE, with concretions.
131. SHALY SANDSTONE, with fucoidal markings. Van Hornsville, Herkimer co.
132. do Stark, Herkimer co.



133. SILICIOUS LIMESTONE, with sulphate of strontian in crystals,  
Stark, Herkimer co.
134. do do
135. GYPSUM, Stark, Herkimer co.
136. DARK COLORED GYPSUM. Stark, Herkimer co.
137. SANDSTONE AND GYPSUM. do
138. SHALE WITH GYPSUM. do
139. do do

## TABLE CASE, No. 11.

## NIAGARA GROUP.

1. SHALE, with *Phacops limulurus*. Lockport.
2. do with impressions of *Phacops limulurus*. Lockport.
3. do with *Homalonotus delphinocephalus*. do
4. do with *Dictyonema reteformis*. do
5. do with *Caryocrinus ornatus*. do
6. do with *Spirifer niagarensis*. do
7. do do do
8. do with *Leptaena subplana*. do
9. do with *Atrypa nitida*. do
10. LIMESTONE composed of crinoidal joints. do
11. ANHYDROUS GYPSUM. do
12. WHITE GYPSUM, or alabaster. do
13. ENCRINAL LIMESTONE, (polished.) do
14. LIMESTONE, with crystallized coral. do
15. SILICIOUS LIMESTONE. Niagara Falls.
16. DARK LIMESTONE, with *Cytherina*, Wayne co.
17. DARK BITUMINOUS LIMESTONE, do
18. do do do
19. PEARL SPAR. Lockport.
20. DOGTOOTH SPAR. do
21. PEARL SPAR AND DOGTOOTH SPAR. Lockport.
22. DOGTOOTH SPAR. Lockport.
23. LIMESTONE, with small geodes of Pearl spar. Lockport.
24. do with galena, sulphuret of lead. Rochester.
25. do with zinc blend. Niagara Falls.
26. do with crystals of zinc blend. do.

27. FRAGMENTS OF ORTHOCERA. Wayne co.
28. do do
29. SULPHATE OF STRONTIAN. Lockport.
30. do do
31. PEARL SPAR WITH DOGTTOOTH SPAR. Lockport.
32. DARK LIMESTONE, with cavities. Barre, Orleans co.
33. do upper part of rock. Niagara Falls.
34. ENCRINAL LIMESTONE. Niagara Falls.
35. LIMESTONE, with *Cladopora seriata*. Lockport.
36. DARK LIMESTONE. Near Lenox.
37. BRECCIATED LIMESTONE. Oneida co.
38. do Ham's quarry.
39. CONGLOMERATE LIMESTONE.
40. do
41. do
42. do
43. do Ham's and Bigelow's quarries.

## VERTICAL CASE.

### NIAGARA LIMESTONE. (CONTINUED.)

44. SHALE, with nodules of gypsum replacing *Caryocrinus ornatus*.  
Lockport.
45. do with *Orthoceras undulatus*. Lockport.
46. do with *Dictyonema reteformis*. do
47. do with *Leptaena striata*. do
48. do with *Leptaena rugosa* and *Leptaena striata*. Lockport.
49. do with *Orthis elegantula*. Lockport.
50. do with *Orthis testudinaria* and *Leptaena rugosa*. Lockp't.
51. do with *Orthis testudinaria*. Lockport.
52. do with *Bumastis barriensis*. do
53. do with fragments of various fossils. Lockport.
54. do with *Orthis testudinaria* and *Leptaena rugosa*. Lockp't.
55. do with *Avicula emacerata*. Lockport.
56. do with *Leptaena subplana*. do
57. ENCRINAL LIMESTONE. Near Lewiston.
58. SHALE, with *Caryocrinus ornatus*, and cavities filled with calcareous spar. Lockport.

59. LIMESTONE, with crinoidal columns. Lockport.
60. ASTROCERIUM VENUSTUM, from the original excavation of the  
Erie canal, 1825; (polished specimen.)  
Lockport.
61. LIMESTONE, with striated surface, lignelite. Lockport.
62. do with *Atrypa reticularis*. Lockport.
63. BROWN BITUMINOUS LIMESTONE. Rochester.
64. LIMESTONE, with *Trematopera ostiolata*. do.
65. do with *Atrypa neglecta*. do.
66. do with vertically striated surface, lignilites. Lock-  
port.
67. BRECCIATED LIMESTONE. Near Rochester.
68. WHITE GYPSUM, ALABASTER, (polished specimens.) Lockp't.
69. GEODE OF DOGTOOTH SPAR. Lockport.
70. ENCRINAL LIMESTONE. do
71. do (polished specimen.) Lockport.
72. LIMESTONE, with dogtooth and pearl spar. Lockport.
73. do with dogtooth spar. do
74. do with pearl spar. do
75. do with geode of dogtooth spar. do
76. SULPHATE OF STRONTIAN. Lockport.
77. LIMESTONE, with pearl spar and dogtooth spar. Lockport.
78. do with geode of pearl spar, with selenite. Rochest'r.
79. ANHYDROUS GYPSUM. Lockport.
80. SULPHATE OF STRONTIAN. do
81. LIMESTONE, with pearl spar. Lockport.
82. do do
83. do with geode filled with bituminous coal. Lockp't.
84. LIMESTONE, with dog tooth spar, Lockport, N. Y.
85. do with pearl spar and dog tooth spar, do
86. do with dog tooth spar, do
87. do with dog tooth spar, do
88. PEARL SPAR, (a geode,) do
89. do AND DOGTOOTH SPAR, do
90. do rosecolored, do
91. LIMESTONE, with pearl spar, rosecolored, and dogtooth spar,  
Lockport, N. Y.
92. do with dogtooth spar and sulphate of stroutian,  
Lockport, N. Y.



93. LIMESTONE, with dogtooth spar. Lockport, N. Y.
94. PEARL SPAR in geode of limestone. do
95. DOGTOOTH SPAR. do
96. do AND PEARL SPAR, replacing *Astrocerium venustum*. Lockport, N. Y.
97. BROWN SPAR. Lockport, N. Y.
98. LIMESTONE, with *Euomphalus hemispherica*. do
99. CONCRETIONARY LIMESTONE, four miles north of Manchester.
100. LIMESTONE, with concretionary nodes upon surface, Niagara Falls, N. Y.
101. GEODE, with pearl spar and crystals of sulphate of strontian.  
First excavation of the Erie canal,  
1825, from Mr. Bett, Lockport, N. Y.
102. LIMESTONE, a concretion, near Skenandoa.
103. DARK BITUMINOUS LIMESTONE. Between Lenox Basin and Canastota.
104. LIMESTONE, with cavity showing laminæ of growth of *Astrocerium venustum*, Rochester.
105. COMPACT LIMESTONE, with *Cytherina*. Ham's quarry, Cayuga county.
106. CONCRETIONARY LIMESTONE, four miles north of Manchester.
107. COMPACT DARK COLORED LIMESTONE. Wolcott, Wayne county.
108. do do do do do
109. LIMESTONE, with *Cladopora seriata*. Sweden, Monroe county.
110. do *Diplophyllum cespitosum*. Lockport.
111. COMPACT LIMESTONE, with *Cytherina*. Butler, Wayne Co.
112. LIMESTONE, with cavities lined with crystals of calcareous spar. Lockport.
113. SHALY LIMESTONE, with *Spirifer crispus* and minute *Cytherinae*. Ham's quarry, Cayuga county.
114. COMPACT BROWN LIMESTONE. Rochester, Monroe county.
115. do LIMESTONE. Four miles west of Manchester.
116. CONCRETIONARY LIMESTONE. Steel's creek, Herkimer county.
117. BRECCIATED LIMESTONE. do do
118. LIMESTONE, with surface markings. Ham's quarry, Cayuga county.
119. REDDISH COMPACT LIMESTONE. Steel's creek, Herkimer Co.
120. CONCRETIONARY do Near Skenandoa.
121. BRECCIATED do do

122.	BRECCIATED LIMESTONE.	Near Skenandoa.
123.	do do	do
124.	do do	do
125.	CONCRETIONARY do	do

## TABLE CASE, No. 12.

## ONONDAGA SALT GROUP.

1. COMPACT RED SHALE. Cruger's mill, Herkimer county.
2. VARIEGATED SHALE. Chittenango.
3. RED SHALE. Between Sauquoit creek and Paris hill.
4. VARIEGATED SHALE. Baldwinsville.
5. RED SHALE, with green spots. Baldwinsville.
6. do do do Oneida castle.
7. GREENISH GRAY SHALE. North of Chittenango village.
8. GREY SHALE. South of Port Byron.
9. GREEN SHALE. Churchville, Monroe county.
10. do do with seams of gypsum. Near Lake Sodom.
11. RED SELENITE, with green shale. Clyde, Wayne county.
12. RED GYPSUM, do do Lake Sodom.
13. COMPACT GYPSUM, do do Monroe county.
14. GREY SHALE, with cavities of crystals. Near Lake Sodom.
15. do with remains of *Cytherina*. Near Peru.
16. do with cavities of crystals. Near Lake Sodom.
17. CALCAREOUS INFILTRATIONS, between layers of gypsum. Allen's creek, south part of Monroe Co.
18. GYPSEOUS MARL. Newark, Wayne county.
19. GYPSUM. Allen's creek.
20. do do
21. GYPSEOUS MARL, with seams of fibrous gypsum. Monroe county.
22. SELENITE. Nine mile creek.
23. do with fragments of marl enclosed. Newark, Wayne county.
24. do with fragments of marl enclosed. Newark, Wayne county.
25. do with fragments of marl enclosed. Near Camillus.

26. GYPSEOUS MARL, with marks of pseudomorphic crystals of  
common salt. S. of Syracuse.
27. do do Hill S. E. of Chittenango.
28. do do Bull's quarry, Lenox.
29. do do do
30. do do Kelby's quarry, Lenox.
31. PSEUDOMORPHIC CRYSTAL OF COMMON SALT. S. of Syracuse.
32. do do Bull's quarry, Lenox.
33. do do Nine mile creek.
34. GRAY SHALE. Bull's quarry, Lenox.
35. do with obscure fossils. Near Bellisle.
36. do with impressions of fossil shells. Bull's quar-  
ry, Lenox.
37. do do do
38. do with obscure fossil shells. Bull's q'y Lenox.
39. do with plant-like impressions. do
40. do with some plant-like impressions. do
41. SERPENTINE. Near Syracuse.
42. do do
43. CALCAREOUS SERPENTINE. Near Syracuse.
44. do do
45. do do
46. do do
47. SERPENTINE, with crystals of calcareous spar. Near Syracuse.
48. do Syracuse.
49. GYPSEOUS MARL. Nine mile creek.
50. BLACK GYPSEOUS MARL, with selenite. S. of Bellisle.
51. NODULE OF GYPSUM AND MARL. S. of Chittenango.
52. SELENITE, with black gypseous marl. Howland's quarry,  
Springport. Cayuga co.
53. do do do
54. DARK SHALE, with surface covered with black selenite. Mar-  
ble's quarry, Port Byron.
55. GRAY GYPSEOUS MARL, with spherical cavities containing con-  
cretions. Lenox.
56. IMPURE LIMESTONE, with spherical cavities.
57. HYDRAULIC LIMESTONE. Troopsville.
58. ASH COLORED HYDRAULIC LIMESTONE, with remains of *Strepte-*  
*lasma*. Black Rock.



59. HYDRAULIC LIMESTONE, with lignilites. Caneseraga creek.  
 60. do do Onondaga.  
 61. do do do  
 62. do do Caneseraga creek.  
 63. do do do  
 64. VERMICULAR LIMESTONE. Near Syracuse.  
 65. HYDRAULIC LIMESTONE, with head of *Eurypterus remipes*.  
 Oriskany.

## VERTICAL CASE, No. 12.

## ONONDAGA SALT GROUP. (CONTINUED.)

66. VARIEGATED RED MARL. Near Oneida castle.  
 67. RED MARL, with green spots. Chittenango.  
 68. RED SHALE. Between Sauquoit creek and Paris hill.  
 69. GREEN SHALE. do  
 70. GRAY SHALE. Near Chittenango.  
 71. do Allen's creek, Monroe co.  
 72. GRAY GYPSEOUS MARL. Orlean's co.  
 73. GRAY GYPSEOUS SHALE. Near Churchville.  
 74. GYPSEOUS MARL. Allen's creek.  
 75. do Lockville, Wayne co.  
 76. FRIABLE SANDSTONE. Near Paris hill.  
 77. GYPSEOUS SHALE. do  
 78. do do  
 79. GYPSEOUS MARL. Allen's Creek.  
 80. do with seams of fibrous gypsum. S. part of  
 Monroe county.  
 81. GREENISH MARL, with fibrous gypsum. Jordan.  
 82. do do do  
 83. RED GYPSUM, with gypseous marl. do  
 84. do nodules. Newark, Wayne county.  
 85. GYPSEOUS MARL. do  
 86. do Clyde, do  
 87. MARL, with red selenite. Newark, do  
 88. GYPSEOUS MARL. Near Port Gibson, Monroe county.  
 89. ARGILLACEOUS LIMESTONE. Near Churchville. Monroe county.  
 90. SELENITE, with decomposing iron pyrites. Newark.  
 91. GYPSUM. do

92. GYPSUM. Allen's creek.
93. do Leroy.
94. do do
95. do do
96. do nodule. Monroe county.
97. GRANULAR GYPSUM. Allen's creek.
98. GYPSEOUS MARL, with selenite. S. of Belleisle.
99. GREY GYPSEOUS MARL.
100. GREY ARGILLACEOUS LIMESTONE.
101. GYPSEOUS SHALE. Near Waterville.
102. COMPACT LIMESTONE, with minute vermicular cavities. Waterville.
103. do with minute cavities filled with concretions. Near Waterville.
104. GREY SHALE, with cavities made by crystals. Near Jordan Lake.
105. DARK SHALY LIMESTONE. Near Waterville.
106. COMPACT LIMESTONE. do
107. SHALY LIMESTONE. do
108. GREY SHALE.
109. GYPSEOUS MARL, with selenite. Newark, Wayne county.
110. do Near Camillus.
111. do do
112. SELENITE. do
113. GYPSEOUS MARL, with selenite and marks of pseudomorphic crystals. Near Camillus.
114. do with marks of pseudomorphic crystals. Near Camillus.
115. PSEUDOMORPHIC CRYSTALS OF COMMON SALT. Camillus.
116. do do do
117. do do do
118. do with imperfect fossil shells on shale. Lenox.
119. IMPERFECT PSEUDOMORPHIC CRYSTALS. Brown's quarry, near Canaseraga creek.
120. GYPSEOUS SHALE, with marks of pseudomorphic crystals. Near Belleisle.
121. GYPSEOUS SHALES, with marks of pseudomorphic crystals. Lenox.
122. do Near Camillus.

123. PSEUDOMORPHIC CRYSTAL OF COMMON SALT. Near Camillus.  
 124. GYPSEOUS SHALE, with pseudomorphic crystals. Near Camillus.  
 125. DARK COLORED SHALE.  
 126. GREY SHALE. Near Belleisle.  
 127. DARK SHALE, with impression of marine plants. Lenox.  
 128. do do do  
 129. GRAY SHALE. Chittenango.  
 130. SERPENTINE AND LIMESTONE. Syracuse.  
 131. do do  
 132. do do  
 133. do (polished) do  
 134. do do  
 135. SERPENTINE, (polished.) do  
 136. do do  
 137. do do  
 138. do do  
 139. do do  
 140. do do  
 141. do do  
 142. do do  
 143. do do  
 144. SERPENTINE AND LIMESTONE. do  
 145. SULPHATE OF STRONTIAN IN GRAY MARL. Syracuse.  
 146. GRAY MARL, with crystals of sulphate of strontian. Syracuse.  
 147. GRAY GYPSEOUS MARL. Lenox.  
 148. GRAY SHALE, with impressions of fossil shells. Lenox.  
 149. SHALE, with obscure fossil shells. Lenox.  
 150. VESSICULAR LIMESTONE. Onondaga Hollow.  
 151. do Lenox.  
 152. do  
 153. do Lenox.  
 154. do Port Byron.  
 155. do  
 156. do Near Syracuse.  
 157. DARK SHALE. Cherry valley.  
 158. LIMESTONE. Chittenango.  
 159. do with drusy cavities. Oriskany Falls.  
 160. GYPSEOUS MARL. Cherry Valley.



161. GREY SHALY LIMESTONE. Chittenango.
162. GYPSEOUS MARL, with calcareous incrustations. Allen's  
creek, Monroe county.
163. HYDRAULIC LIMESTONE, with cavities.
164. GREY GYPSEOUS SHALE. Chittenango.
165. do do
166. GYPSEOUS MARL.
167. NODULE OF GYPSUM. Near Jamesville.
168. GYPSEOUS MARL, with seams of fibrous gypsum. Phelps,  
Ontario county.
169. SELENITE, with compact gypsum. Phelps, Ontario co.
170. BLACK GYPSEOUS MARL, with selenite. Springport, Cayuga co.
171. do do do
172. do do do
173. LIMESTONE ABOVE GYPSUM BEDS. Jamesville.
174. GYPSEOUS MARL, with nodules of gypsum. S. of Chittenango.
175. COMPACT GYPSEOUS MARL.
176. do
177. GRAVEL CEMENTED BY GYPSUM. Boring at Salina.
178. GYPSEOUS SHALE. Kennady.
179. COMPACT LIMESTONE, with vessicular cavities filled with  
crystalline matter. Near Lanak's mill.
180. COMPACT LIMESTONE, with zinc blend. do
181. do with irregular cavities. do
182. HYDRAULIC LIMESTONE, with lignilites. do
183. do do do
184. do with obscure fossils. Byron, Genesee co.
185. do with cherty nodules. Near Marcellus.
186. do do do
187. COMPACT SHALY LIMESTONE, Phelps, Ontario co.
188. CRYSTALIZED GYPSUM. Deposites from the salt-vats, (10 spe-  
cimens.) Syracuse.
189. CALCAREOUS FORMATION, having oolitic structure. Deposites  
from salt-vats, (4 specimens.) Syracuse.
190. OOLITE. Deposites from salt-vats (3 spe.) Syracuse.
191. CALCAREOUS MASS, showing oolitic and pitted structure. De-  
posite from salt-vats. Syracuse.

*Upper part of Onondaga salt group continued in vertical case of water-lime group.*

1. HYDRAULIC LIMESTONE. Allen's creek.
2. do do
3. do do
4. do Clarence Hollow.
5. do Allen's creek.
6. do do
7. do do
8. do do
9. do Monroe co.
10. do Caledonia.
11. do Near Lewiston, Niagara co.
12. do Allen's creek.
13. do Williamsville, Erie co.
14. do do
15. do Street Farm, Caledonia.
16. do do
17. do Allen's creek.
18. do Street Farm, Caledonia.
19. do Phelps, Ontario county,
20. do One mile east of Vienna.
21. do Near Vienna.
22. do with sulphate of strontian. Street farm, Caledonia.
23. do Phelps, Ontario county.
24. do (partially burned.) Phelps, Ontario county.
25. SHALY HYDRAULIC LIMESTONE. Phelps, Ontario county.
26. HYDRAULIC LIMESTONE, with nodule of chert. Marcellus.
27. do with crystalline nodules. Lanak's mills.
28. do with crystalline nodules. Lanak's mills.
29. SHALY HYDRAULIC LIMESTONE.
30. DARK COLORED HYDRAULIC LIMESTONE. Marcellus.
31. HYDRAULIC LIMESTONE. Cherry valley.
32. do (dark colored.) Near Marcellus.

33. SHALY HYDRAULIC LIMESTONE. Near Deansville, Oneida Co.  
 34. do (dark colored.) Near Deansville, Oneida county.  
 35. HYDRAULIC LIMESTONE. Onondaga valley.  
 36. do with fluor spar. Manlius.  
 37. do do do  
 38. do do do  
 39. do do do  
 40. do do do  
 41. do do do  
 42. do Onondaga Valley.  
 43. do Cherry Valley.  
 44. do Phelps, Ontario county.  
 45. GYPSEOUS SHALY LIMESTONE.  
 46. HYDRAULIC LIMESTONE. Near Lanak's Mills.  
 47. do (shaly.) Oriskany Falls.  
 48. do Chittenango.  
 49. do Near Manlius.  
 50. do with *Anhydrite*.  
 51. VESSICULÆ LIMESTONE. Near Syracuse.  
 52. HYDRAULIC LIMESTONE. E. Steel's creek, Herkimer Co.  
 53. do upper part shaly, with crystals of baryta. Phelps, Ontario county.  
 54. do black, shaly upper layers. Phelps Ontario county.  
 55. do with *Lingulæ*. Cherry Valley.  
 56. do Vessicular. Oriskany.  
 57. do do  
 58. do Below Jamesville.  
 59. do with cavities filled with crystalline matter. Near Jamesville.  
 60. do with crystals of magnesian carbonate of lime. Near Marcellus.  
 61. do crystals of magnesian carbonate of lime. Near Marcellus.  
 62. do with nodule of chert. Near Marcellus.  
 63. do with gypsum. Near Syracuse.



## MEMORANDUM OF DRAWERS AND BOXES OF FOSSILS,

Principally of duplicate specimens from various rocks and groups, in the basement and in the shed of the old State Hall.

---

TO THE REGENTS OF THE UNIVERSITY

OF THE STATE OF NEW-YORK :

Gentlemen,—In answer to the requirement to prepare a catalogue of the duplicate specimens which have been collected in the department of Palaeontology, I must beg leave to state that when I began the Palaeontology in 1843, it was my wish to collect as far as possible suites of fossils for the State collection and for the Colleges, as had been done of the rocks and minerals during the Geological survey ; convinced of the great importance of having these collections, and that no time could ever be so favorable for the object as during the progress of the necessary collections for the Palaeontology. Having, however, no appropriation for the employment of an assistant, I hired persons at my own expense for two or three years ; and a large part of the collection of duplicates enumerated in the subjoined list, was thus made.

Finding it impossible to make the collections with my own means, I abandoned the intention of making collections for the colleges ; and for the purposes of obtaining specimens for description, found it best to purchase them, or to employ collectors occasionally in a few localities.

A complete catalogue of individual specimens in the duplicate collections becomes, equally, as with the arranged collection, impossible at the present time, for the reason that many could not now be characterized by names. Neither would such a cata-

logue be of any value until some permanent arrangement of the specimens be made. They are now placed in drawers, sometimes piled two or three tiers deep, and others are packed in boxes.

During the past summer, the rooms formerly appropriated to this department were otherwise disposed of, and the specimens removed to a basement room, damp and dark, under the west end of the main building. This place is entirely unfit for such purposes; from its dampness it is impossible to use it as a working room, and there is not light enough to examine carefully and arrange the specimens. Under these circumstances I have not opened boxes where the specimens are much better protected and safer than they can be otherwise. All that I have been able to do, is to endeavor to arrange in some order the drawers, at least so far as to place them in a temporary case, on one side of the room.

More than a year since I began a system of numbering for all the duplicate specimens, with a view to catalogue them so far as reference to the different rocks and groups, and known genera, could be made; and I had procured cases for the arrangement of the specimens. When the rooms were otherwise appropriated last summer, most of the drawers of these cases were piled up on the floor of the basement room, and the cases themselves converted into other uses. In the present uncertain and disordered state of this collection, with no place to arrange the cases or drawers, this system of cataloguing cannot be continued.

You will perceive by the number of boxes and drawers enumerated, that there is a large collection; the drawers alone contain more than three thousand specimens. Many of these are duplicates, and many of them are not the most perfect specimens; but they are such as a collector does not pass by; and many or all are useful in making out the description of species.

The collection contains many good and valuable specimens; which, after selecting a very perfect suite could be made available either for collections for the colleges and academies, or for exchanges, should it ever be regarded as desirable to extend the collections in this department beyond the limits of the State.

Many of the drawers contain the specimens just as they have been distributed from the boxes, no selection or separation having yet been made. These drawers have a label of the locality from which the specimens have been collected.

I would beg leave to call your attention to the fact, that the present situation of these specimens is very unfavorable to their safety. Those in the smaller drawers are, in a high degree, from their exposure, and from the room being used as a general lumber room, exposed to dust; and the dampness of the room is so great that I suppose the shaly specimens, and those containing any iron pyrites will soon go into decomposition.

Besides these specimens there are a large number of slabs containing fossils lying in the basement rooms, and many similar ones in the yard and in the shed. The grouping of different species, or of a single species over large surfaces, show their habits while in a living state. The same species in rocks of different character, and in different conditions of preservation, have been collected, in order to show the physical conditions under which the fossils became imbedded. These have been collected with much labor and expense, and in a large collection, should be considered very important and interesting specimens. I regret to say, however, that many such specimens have been either partially or entirely destroyed, since they were deposited on the premises.

The collections include the following:

1. One temporary case containing ninety-six drawers filled with specimens from different rocks and groups.

2. Nine similar drawers filled with specimens, not in a case.

Three drawers filled with specimens, belonging to new cases.

Forty-five large drawers in close cases, filled with specimens of the fossils of the lower limestones, Helderberg limestones, Hamilton and Chemung groups.

Fourteen boxes of specimens of fossils and minerals from the Niagara group.



Three boxes of specimens of Hamilton group and Helderberg limestone.

Forty-nine boxes and three kegs of specimens in the shed outside the building.

Nearly all these boxes have been examined, the specimens rearranged, and the boxes labelled with a card indicating the fossils they contain. Owing to exposure and other causes many of these labels have become effaced.











*Literary Scientific Association*

*Bliss, Walcott,*  
FIFTH ANNUAL REPORT

*new york*  
OF THE

REGENTS OF THE UNIVERSITY,

ON THE

CONDITION OF THE STATE CABINET

OF

NATURAL HISTORY,

AND THE

HISTORICAL AND ANTIQUARIAN COLLECTION

ANNEXED THERETO.

Transmitted to the Assembly, February 2, 1852.

A L B A N Y :

C. VAN BENTHUYSEN, PRINTER TO THE LEGISLATURE,  
No. 407 Broadway.

.....  
1852.



1841

*Chas. D. Walcott*

FIFTH ANNUAL REPORT

OF THE

REGENTS OF THE UNIVERSITY,

ON THE

CONDITION OF THE STATE CABINET

OF

NATURAL HISTORY,

AND THE

HISTORICAL AND ANTIQUARIAN COLLECTION

ANNEXED THERETO.

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Made to the Assembly, February 2, 1852.  
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ALBANY:

CHARLES VAN BENTHUYSEN, PRINTER TO THE LEGISLATURE

No. 407 Broadway.

.....  
1852.



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OF THE UNIVERSITY OF CHICAGO



# State of New-York.

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No. 122.

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IN ASSEMBLY, FEB. 2, 1852.

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## FIFTH ANNUAL REPORT

Of the Regents of the University, on the condition of the State Cabinet of Natural History, and the Historical and Antiquarian Collection annexed thereto.

To the HON. JONAS C. HEARTT,

*Speaker of the Assembly :*

SIR,—I have the honor to transmit the Annual Report of the Regents of the University, on the State Cabinet of Natural History and the Historical and Antiquarian Collection annexed thereto.

I have the honor to remain,

Respectfully,

Your ob't serv't,

G. Y. LANSING,

*Chancellor.*

IN ASSEMBLY, THE 21st

THE 21st ASSEMBLY

At the opening of the 21st Assembly, the President of the American Medical Association, Dr. J. C. Brannan, delivered the opening address, in which he reviewed the progress of the Association during the past year.

Dr. J. C. Brannan, President of the Association.

Address of the President.

I have the honor to present to you, as the President of the American Medical Association, the 21st Annual Meeting of the Association, held at the University of Chicago, from the 21st to the 25th of May, 1917.

I have the honor to remain,

## REGENTS OF THE UNIVERSITY, 1852.

---

WASHINGTON HUNT, Governor, *ex officio*.  
SANFORD E. CHURCH, Lieut. Governor, *ex officio*.  
HENRY S. RANDALL, Secretary of State, *ex officio*.  
GERRIT Y. LANSING, Chancellor.  
JOHN GREIG, Vice-Chancellor.  
GULIAN C. VERPLANCK, LL. D.  
JOHN K. PAIGE.  
ERASTUS CORNING.  
PROSPER M. WETMORE.  
JOHN L. GRAHAM.  
JOHN MCLEAN.  
GIDEON HAWLEY, LL. D.  
DAVID BUEL.  
JAMES S. WADSWORTH.  
JOHN V. L. PRUYN.  
JABEZ D. HAMMOND, LL. D.  
JOHN L. O'SULLIVAN.  
ROBERT CAMPBELL.  
REV. SAMUEL LUCKEY, D. D.  
ROBERT G. RANKIN.  
PHILIP S. VAN RENSSELAER.  
REV. JOHN N. CAMPBELL, D. D.  
T. ROMEYN BECK, Secretary.





STANDING COMMITTEE OF THE REGENTS,

*Specially charged with the care of the State Cabinet.*

1851.

WASHINGTON HUNT, Governor.

CHRISTOPHER MORGAN, Secretary of State.

ROBERT G. RANKIN.

ERASTUS CORNING.

ROBERT CAMPBELL.

---

JOHN GEBHARD, JR., Curator.

JAMES A. HURST, Taxidermist.

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## REPORT.

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TO THE LEGISLATURE OF THE STATE OF NEW-YORK:

The Regents of the University

RESPECTFULLY REPORT:

That the State Cabinet of Natural History, under the superintendence of its efficient Curator, continues in a satisfactory condition. All the animals preserved in the collection, have been carefully examined twice during the year just expired, to forestall, if possible, any injury from the moth or other destructive causes. Mr. Hurst, the taxidermist, is specially engaged for this duty, as stated in a previous report.

The additions to the State Cabinet, by purchase, have not been numerous, although they are specially deserving of note. After several years of strenuous effort, sanctioned by previous standing committees of the Board, and consequent unsuccessful outlays of sums of money, by persons authorised to collect the larger animals native to the State, the last winter proved an eminently successful period in attaining the desired object. A male moose, evidently of advanced age and certainly of unusual size, was taken in the northern part of the State, and with much labor and considerable expense, brought to this city, in a good state of preservation. It has been purchased for the collection, in accordance, it may truly be said, with the generally expressed wishes of your predecessors.

A male panther, of large size, has also been bought, with a beautiful specimen of the *Fisher* or *Black Cat* of the New-York

Hunters (*Mustela Canadensis*.) This last is becoming extremely rare, within our borders,—so rare indeed that Dr. Dekay could not obtain a specimen to figure from, and could only give us in his “Zoology of the State of New-York” a drawing of the skull.

As the moose is said to differ in various respects from the descriptions and figures usually given of that animal, and as a plate of the Fisher would seem in a measure necessary, to complete the delineations of animals native to our State, the Regents have engaged from the funds granted to them, lithographic drawings of each. If it be desired to multiply copies of these, any further expense will be limited to that of printing and paper.

A list will be found accompanying this Report of the articles added to the Indian Collection in 1850–51, under the superintendence of Lewis H. Morgan, and which did not appear in the last communication made by the Regents to the Legislature. The illustrated report on these articles, by the last named gentleman, was duly transmitted, but it was not deemed advisable by the Legislature to print the same.

There remain but few of the large animals indigenous to the State, to be obtained, and the prices demanded must necessarily be smaller. The Regents, through the liberality of the Legislature, will be enabled to add these from time to time, from the present annual appropriation.

Accompanying this report, will be found, among other matters, a list of donations made to the State Cabinet during the year 1851. Their variety and value illustrate the interest taken by the public in the collection. But even this is still more strikingly and remarkably witnessed in the crowds that literally, from day to day, constitute its visitors.

By order of the Regents,

G. Y. LANSING, *Chancellor*.

T. ROMEYN BECK, *Secretary*.

*The following Papers accompany this Report.*

- A. An account current of receipts and expenditures during 1851
- B. Catalogue of the Quadrupeds, Birds, Reptiles, Amphibians, Fishes, &c., added during the year 1851.
- C. List of Minerals, Geological Specimens and Fossils, added during the year 1851.
- D. Additions to the Historical and Antiquarian collection, by donation and purchase, from January 1st, 1851, to January 1st, 1852.
- E. References to various writings on the NATURAL HISTORY OF NEW-YORK, that have appeared during 1851.
- F. Description of the means employed to remove the rocks at Hurlgate, by submarine engineering, by E. Meriam, (accompanying a specimen of the rock, presented to the State Cabinet.)
- G. A statement of the materials which have been and are to be used in completing the publication of the Natural History received into the Geological Rooms since the 12th day of February, 1851, to January 1, 1852.



( A. )

*The Regents of the University, in account current with the appropriations towards preserving and increasing the "State Cabinet of Natural History," and the Historical and Antiquarian Collection, annexed thereto, and for defraying the incidental expenses of the same.*

To balance from previous account (see Senate Doc., 1851, No. 30, p. 15),.....	\$55 51
1851.	
Jan. 6. To appropriation received from the Comp- troller, .....	250 00
July 14. To appropriation received from the Comp- troller, .....	800 00
	<hr/>
	\$1,105 51
	<hr/>

1850. DR.

Dec. 27. By cash paid Dr. Asa Fitch, for 295 specimens of insects, native to the State, and naming and arranging the same, (described in the last report,) No. 1, .....	\$80 00
1851.	
Jan. 20. By cash paid A. F. Chatfield, for 145 speci- mens of insects collected at Albany and its vicinity, No. 2, .....	15 00
By cash paid Jas. Gladding, glazing and paint- ing at State Cabinet, No. 3, .....	7 96
By cash paid J. A. Hurst, on account of sala- ry, for preserving specimens, keeping them in good condition, as per contract, from Sept. 1st, 1850, to July 1st, 1851, No. 4, ..	150 00
By cash paid contingent expenses of State Cab- inet, six accounts with vouchers, No. 5, ..	6 61
Amount carried forward,.....	<hr/>
	\$259 57

Amount brought forward, .....	\$259 57	
April 3. By cash paid Dexter & Nelligar, for arsenic, alcohol, camphor, &c., during two years, for State Cabinet, No. 6, .....	12 02	
July 15. By cash paid J. A. Hurst, for a bull moose, No. 7, .....	500 00	
26. By cash paid Dr. F. B. Hough, for collecting various specimens of fishes and reptiles in the river St. Lawrence, &c., No. 8, .....	20 00	
Aug. 1. By cash paid for incidental expenses, six vouchers, No. 9, .....	3 12	
Oct. 6. By cash paid for incidental expenses, No. 10, W. J. Warner, binding, .....	\$2 75	
Blank book, visitors, .....	5 00	
Expenses on minerals presented by Dr. Conkey, .....	1 75	
		9 50
21. By cash paid, No. 11, John Gebhard, Jr., incidental ex- penses of the rooms, .....	\$13 94	
Hood & Tobey, for a microscope, ..	25 00	
Weed & Parsons, for printing labels, .....	6 00	
		44 94
Dec. 15. By cash paid Jas. A. Hurst, salary to Septem- ber 1st, 1851, No. 12, .....	50 00	
By cash paid Jas. A. Hurst, for various ani- mals preserved, including a male panther, very large, a fisher, very rare, rattlesnake and young, and a black rat, No. 13, .....	155 00	
		\$1,054 15
By balance to new account, .....		51 36
		<u>\$1,105 51</u>

We have examined the above account, and find it correct. The payments have been made by order of the standing committee and are accompanied with proper vouchers.

*Albany, Dec. 24, 1851.*

WASHINGTON HUNT,  
CHRISTOPHER MORGAN,  
ERASTUS CORNING.

( Copy. )

ALBANY CITY BANK, Dec. 19, 1851.

I certify that there is the sum of fifty-one dollars and thirty-six cents standing to the credit of the "State Cabinet of Natural History" on the books of this bank.

( Signed ) *H. H. MARTIN,*  
Cashier.



( B. )

CATALOGUE

OF THE

QUADRUPEDES, BIRDS, REPTILES, AMPHIBIANS, FISHES, &c.,

ADDED TO THE

State Cabinet of Natural History,

From January 1, 1851, to January 1, 1852.

(R)

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# MAMMALIA.

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## ORDER CARNIVORA.

ZOOLOGY—Part I.

### FAMILY SORECIDÆ.

CALOPS AQUATICUS, Common Shrew Mole, - - - - p. 15

Presented by James H. Raby, of Albany.

### FAMILY URSIDÆ.

URSUS AMERICANUS, American Black Bear, - - - - 24

### FAMILY MUSTELIDÆ.

MUSTELA CANADENSIS, The Fisher, - - - - 31

### FAMILY FELIDÆ.

FELIS CONCOLOR, Northern Panther, (male and female,) - 47

LYNCUS RUFUS, Wildcat or Bay Lynx, - - - - 51

Presented by Julius Rhoades, Esq.

## ORDER RODENTIA.

### FAMILY ARCTOMIDÆ.

ARCTOMYS MONAX, Woodchuck—the skull, - - - - 68

Presented by Lewis McMullen Selkirk, of Bethlehem, Albany county.

## ORDER UNGULATA.

### FAMILY CERVIDÆ.

CERVUS ALCES, The Moose, (male,) - - - - 115



# BIRDS.

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## ORDER ACCIPITRES.

Zoology—Part II.

### FAMILY FALCONIDÆ.

**HALIAETOS LEUCOCEPHALUS**, Bald Eagle, - - - - - p. 5

### FAMILY STRIGIDÆ.

**BUBO MAXIMUS**, Eagle Owl, from Norway.

Presented by D. L. Barker, Esq., of Hevingham  
Hall, Yoxford, Suffolk county, England.

**BUBO ASIO**, Little Screech Owl, - - - - - 25

Presented by Dudley Walsh, of Albany.

## ORDER GRALLÆ.

### FAMILY GRUIDÆ.

**ARDEA CANDIDISSIMA**, White-crested Heron, (female,) - - 221

This specimen was shot by the Hon. John A. Dix  
at East Hampton, on Long Island, in August,  
1850, and is by him presented to the State Cab-  
inet.

# REPTILES.

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## ORDER I. TESTUDINATA.

### FAMILY CHELONIDÆ.

ZOOLOGY—Part III.

CHELONURA SERPENTINA, Snapping Turtle, - - - - -	p. 8
EMYS PICTA, The Painted Tortoise, - - - - -	12
EMYS GUTTATA, The Spotted Tortoise, - - - - -	13
EMYS INSCULPTA, The Wood Terrapin, - - - - -	14
CISTUDA CAROLINA, Common Box Tortise, - - - - -	24

## ORDER III. OPHIDIA.

### FAMILY COLUBERIDÆ.

COLUBER EXIMIUS, The Milk-snake, - - - - -	p. 38
TROPIDONOTUS DEKAYI, The Small Brown-snake, - - -	46

### FAMILY CROTALIDÆ.

CROTALUS DURISSUS, Northern Rattle-snake, - - - - -	55
-----------------------------------------------------	----

Two specimens. The one was taken at Lake George, and presented by S. R. Enders, of Albany. The other was taken near the Schenectady turnpike, four miles west of the city of Albany, and presented by William Wood, of Albany.

## CLASS IV. AMPHIBIA.

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### FAMILY RANIDÆ.

RANA PALUSTRIS, The Marsh-frog, - - - - -	p. 62
BUFO AMERICANUS, Common American Toad, - - - - -	67
HYLA VERSICOLOR, Northern Tree-toad, - - - - -	71

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## FISHES.

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### ORDER V. LOPHOBRANCHII.

#### FAMILY SYNGNATHIDÆ.

ZOOLOGY—Part V.

SYNGNATHUS PECHIANUS, Olive Brown Pipe-Fish, - - -	p. 321
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Presented by A. S. Doane.

HIPPOCAMPUS HUDSONIUS, Hudson river Sea Horse, - - -	322
------------------------------------------------------	-----

Presented by John Jacobson, of Staten Island.



# LIST OF SPECIMENS OF LIVING SALAMANDERS

PRESENTED TO THE

STATE CABINET OF NATURAL HISTORY,

BY S. F. BAIRD, OF WASHINGTON CITY.

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1. *Ambystoma opaca*,

*Salamandra fasciata*. Dekay.

Zoology IV. p. 77. Plate XVII., fig. 40.

2. *Notophthalmus viridescens*,

*Triton millepunctatus*. Dekay. IV.

p. 84. Pl. XV., fig. 34.

3. *Notophthalmus miniatus*,

*Salamandra symmetrica*. Dekay. IV.

p. 73. Pl. XV., fig. 33.

4. *Plethodon glutinosus*,

*Salamandra glutinosa*. Dekay. IV. 81.

Pl. XVII., fig. 42,

5. *Plethodon cinereus*.

6. *Plethodon erythronotus*,

*Salamandra erythronota*. Dekay. IV.

Pl. XVI., fig. 38.

7. *Desmognathus fuscus*,

*Salamandra picta*. Dekay. IV. 75.

8. *Spelerpes bilineata*,

*Salamandra bilineata*. Dekay. IV. 79.

Pl. XXIII., fig. 67.

9. *Hemidactylium scutatum*.

10. *Pseudotriton ruber*,*Salamandra rubra*. Dekay. IV.

p. 80. Pl. XVII. 43.

The specimens were all caught in the course of an hour, on the farm of Joseph C. Tiffany, Esq., near Coxsackie. The ninth species is now for the first time publicly added to the Fauna of the State.

# CATALOGUE OF REPTILES AND FISHES,

FROM ST. LAWRENCE COUNTY, PROCURED FOR THE

STATE CABINET OF NATURAL HISTORY,

BY FRANKLIN B. HOUGH, A. M., M. D.

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## REPTILES.

### FAMILY CHELONIDÆ.

**CHELONURA SERPENTINA**, The Snapping Turtle,

From Gouverneur, St. Lawrence county.

**EMYS PICTA**, Painted Tortoise. From Fish Creek, near Black Lake, Macomb, St. Lawrence county, (upper shell.)

**EMYS INSCULPTA**, Wood Terrapin. Rossie, St. Lawrence county. (shell.)

### FAMILY COLUBERIDÆ.

**COLUBER GETULUS**, Chain-snake. Rossie, St. Lawrence county.

Of common occurrence in this section of the State.

**COLUBER EXIMIUS**, Milk-snake. Rossie. This is the most common of our serpents.

**COLUBER PUNCTATUS**, Ring-Snake. Of rare occurrence in this region. This is the first and only specimen I have found within the last four years. Rossie.

**COLUBER VERNALIS**, Grass-snake. Rossie. Very common in the latter part of summer. It is seldom seen larger than the specimen sent.

**TROPIDONOTUS TENIA**, Striped-snake. Rossie. Very common.

**TROPIDONOTUS DE KAYI**, Small Brown-snake. Rossie. This, like the Ring-snake, I consider rare in this section.



## AMPHIBIANS.

### FAMILY RANIDÆ.

- RANA PIPIENS**, Bull-frog. Rossie.
- RANA HORICONENSIS**, Northern Bull-frog. Black Lake. Rossie.
- RANA FONTINALIS**, Spring-frog. Rossie. Very common.
- RANA HALECINA**, Shad-frog. Rossie. Very common.
- RANA SYLVATICA**, Wood-frog. Rossie. Common. Two specimens, young and adult.
- BUFO AMERICANUS**, Common Toad. Two specimens; a very small young one and an adult. Rossie.
- HYLA VERSICOLOR**, Northern Tree-toad. Rossie. This specimen was kept for some time in order to determine the range of color which it was possible for it to assume. This was found to vary from greenish and light ash-colored to very dark brown, and it was able to assimilate its color to that of the light colored lichen of the beech, and the darker hues of the elm, maple and pine barks with great ease. The time required seemed to vary with the light, but usually occupied less than five minutes.

### FAMILY SALAMANDRIDÆ.

- SALAMANDRA SUBVIOLACEA**, Violet-colored Salamander. Rossie. Very common under stones and rotten logs, more especially in the spring of the year.
- SALAMANDRA RUBRA**, Red Salamander. Common under logs, &c. Rossie. Two specimens; small.

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## FISHES.

- PERCA FLAVESCENS**, American Yellow Perch. Black Lake. This fish is very common in the rivers and small lakes in Northern New-York. An interesting fact relating to this fish has come under my notice, which is worthy of record. Previous to 1843, the waters of Black river

and its tributaries were believed to contain none of this species. In that year Messrs. B. Smith, of Greig, and A. Higby, of Turin, Lewis county, procured about thirty specimens from Oneida Lake and placed in a pond adjoining Brantingham Lake, with the design of rearing them. The obstructions placed to prevent their escape having been removed, they soon found their way into all the streams and lakes not obstructed by water falls, with which there is a water communication. And at this time there is no fish more abundant than these in the tributaries of Black river. This result may furnish a valuable suggestion to those who would desire to introduce new species of fish from distant localities.

Numbers of pike and pickerel were also placed with the perch in the pond, but they are believed to have been destroyed by the salmon trout previously inhabiting it, as none have been observed there since.

**LUCIOPERCA AMERICANA**, Yellow Pike Perch. Commonly known in this section by the single name of *Pike*. Two specimens; one from the Oswegatchie, the other from Black Lake. These and pickerel are caught throughout the year. In winter a hole is cut in the ice, in which hooks are set; the lines being fastened to the short arm of a lever supported by a rod which passes through it. When the lines are drawn down by a fish the long arm of the lever is thrown up as a signal to the fisherman. One person can often attend upon a dozen hooks at a time.

**CENTRARCHUS AENEAS**, Fresh water Bass,  
From Black Lake.

**CENTRARCHUS FASCIATUS**, Black Fresh water Bass. Commonly called by fishermen *Black Bass*. Black Lake.

**POMOTIS VULGARIS**, The common Pond Fish. Sun Fish. Black Lake.

**PIMELODUS PULLUS**, Brown Cat Fish,  
Oswegatchie river.

Another cat fish of very common occurrence in this section, being supposed to be new, is here described:—



(Being under the impression that the following species is new, a description has been prepared, which is here offered. Since it was written, opportunities have occurred for examining numerous specimens at various stages of growth, and no marked difference was noted between the young and the full grown.)

**PIMELODUS GRACILIS, (new sp.)**

*Characteristics.*—Caudal fin, furcate; body, slender; mouth small and armed with two bands of minute villose teeth. Length nine to fifteen inches.

*Description.*—Color, dark olive brown above and light ash-colored beneath the sides, presenting intermediate shades. Surface, scaleless and smooth, except upon the head, where it is minutely granular. Lateral line distinct and nearly straight. Head slightly flattened, with a longitudinal depression, extending from a little before the orbits to a point above the extremities of the gills. Barbels eight; two of which are small, erectile, and placed on the anterior margin of the posterior nostrils and reaching the orbits. Anterior nostrils slightly tubular and much depressed. The angles of the mouth furnished with flattened and pointed barbels extending back to the tips of the gills and with a slight rudiment of an accessory bone at their base. Four barbels on the lower lip, the external ones longest, somewhat flattened: the interval between the inner ones much greater than between those on the same side. Mouth small with minute teeth in each jaw and in the throat. Eyes slightly prominent and color of the iris dusky, with a narrow golden margin. Dorsal fin with one spinous ray slightly serrated behind and six branched rays, the first of which is longest and the last sometimes rudimentary. Pectoral fins with one strong spinous ray sharply serrated behind and nine branched rays which regularly diminish in length from the first to the last. The tips of the pectorals when depressed extend beyond the middle of the dorsal, and the spinous rays of these admit of being fixed at the will of the animal, when they might serve as weapons for defence. Ventral fins



of eight soft rays, the third of which is longest—somewhat rounded and reaching the base of the anal fin. Anal fin with twenty-two—twenty-four branched rays—long and sub-equal. Caudal fin of twenty-two branched rays, furcate. Adipose fin half an inch in length and extending up the back in a ridge about one inch. Vent, midway between the ventral and anal fins, with an urinary meatus behind it, appearing as a small tubercle. Base of the fins becoming reddish after death from infiltration. Length nine to fifteen inches. Fin rays, D. 1·6; P. 1·9; V. 8; A. 22–24; C. 22.

This species occurs in the Oswegatchie, Indian, and other rivers tributary to the St. Lawrence, and in several of the smaller lakes of St. Lawrence and Jefferson counties. Its neat, slender form, small mouth and furcate tail distinguish it from other species which occur in these waters and from any that are described either as proper or extralimital in the Natural History of this State. It is said by fishermen that it did not occur in the Oswegatchie river previous to 1832. It is distinguished by no other local name but simply that of *common catfish* in the localities where it occurs, and is by most considered equal to the trout as an article of food.

**CATOSTOMUS AUREOLUS**, Mullet Sucker. Oswegatchie river. Common in the lake and large streams of St. Lawrence co.

**LEUCISCUS ATRONASUS**, Black-nosed Dace,

From a small stream in Rossie, where it is common.

**LEUCISCUS NITIDUS**, Shining Dace. Oswegatchie river, where it abounds. It is commonly called by no name except *Dace*.

**ESOX RETICULATUS**, The common Pickerel. Common in Black Lake, St. Lawrence river, &c., where it at times attains a weight of fifteen or eighteen pounds.

**HYODON TERGISUS**, River Moon-eye. Black Lake. From the silvery reflection of this fish it has received the local and improper name of *White fish*.

**LEPIDOSTEUS BISON**, Buffalo Bony Pike. Known here only by the name of *Bill fish*. It abounds in Black Lake, and at certain seasons they appear along the shores and stony

points in immense numbers. The proper spawning season of this fish in Black Lake is about the middle of June. At this season they appear in the greatest numbers in companies of four and five. Being objects of no value and very annoying to fishermen, they are destroyed upon all occasions and in great numbers. Pickerel and other fish very often suffer from the bite of these voracious and unsightly fish. They have been taken five feet in length in Black Lake.

ANGUILLA TENUIROSTRA, Common Eel. Oswegatchie river.

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From JOSEPH RUSSEL, of Albany.

EGG OF THE SHARK.

From BENJAMIN KNOWER, of Onondaga Hill, Onondaga county.

A SEA SHELL (Cassis), from the Pacific Ocean.

TORTOISE SHELL, from the Pacific Ocean.

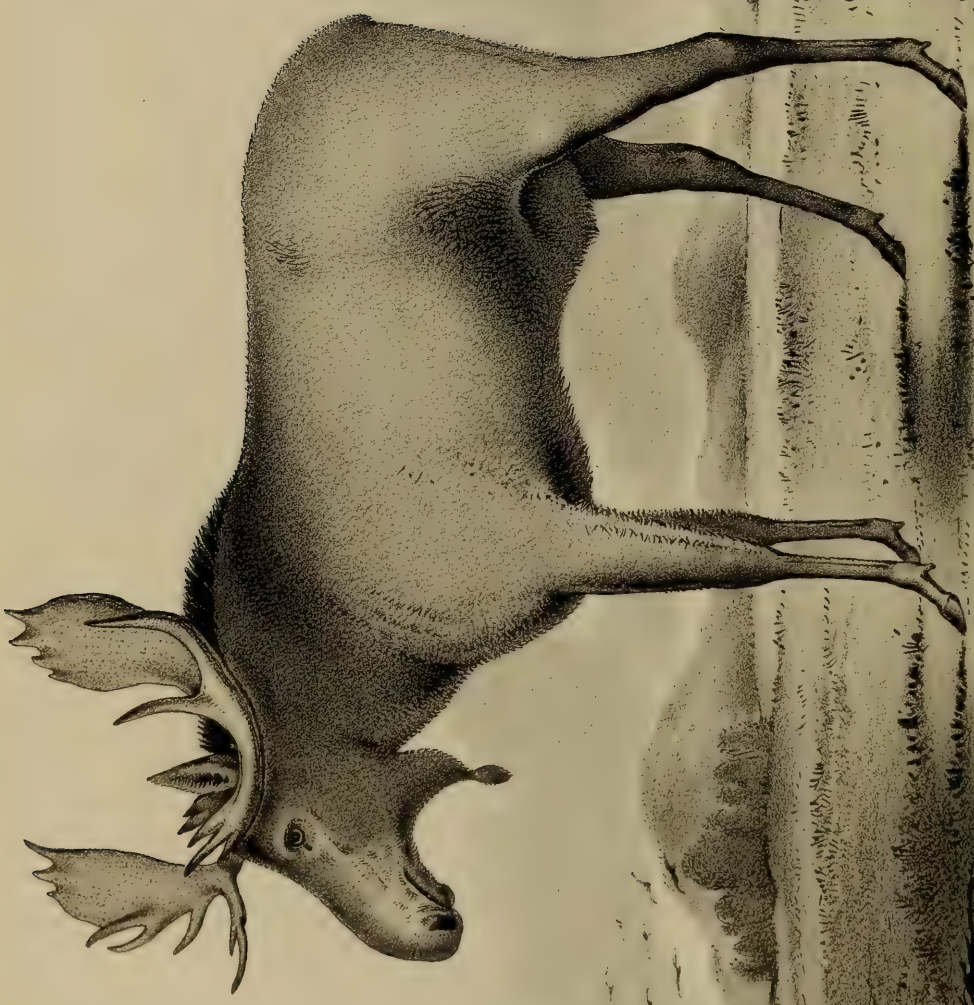
A specimen of CORAL, from the Pacific Ocean.

From ABEL FRENCH, Esq., of Albany.

A BALL OF HAIR, from the stomach of an animal.

Chas. D. Walcott.





LITH. OF RICH. <sup>RD</sup>. PEASE, ALBANY.

CERVIUS ALCES  
MOOSE.

# THE MOOSE.

CERVUS ALCES.

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The accompanying lithograph is after a drawing by Swinton, from the grand specimen in the State Cabinet, which was killed in the town of Ohio, Herkimer county, N. Y., in the month of January, 1851, by hunters in the employ of Mr. James A. Hurst, State Taxidermist, and was by him set up and prepared for the State.

The dimensions of the animal are as follows:

	Feet.	Inches.
Length from point of nose to root of tail,.....	10	2
Length of tail, .....		8
Height at shoulder,.....	6	3

The following account of the moose is copied from De Kay's Zoology of New-York:

In the summer, the moose frequents the neighborhood of lakes and streams, frequently swimming in the water, and feeding upon aquatic plants, among which the roots of the pond lily appear to be most greedily devoured. It also feeds upon the high coarse grasses, twigs of trees, more especially of the striped maple, (*Acer striatum*, Pursh,) which has consequently received the name of *Moose-wood*. It likewise peels old trees, and feeds upon the bark. Period of gestation, nine months; and it produces one or two at a birth, in April or May.

In winter, the moose herd together for mutual protection, selecting hilly woods, and feeding exclusively on young twigs and the moss and bark of trees. These herds consist of a bull, a cow and two calves; sometimes four or five cows, but this is more rare. Occasionally several of these herds unite, and when the



snow lies deep, they will tread down a space of several acres, which are termed by the hunters *moose-yards*. At this season, and in such situations, the hunter attacks them most successfully.

They are yet numerous in the unsettled portions of the State, in the counties of Essex, Herkimer, Hamilton, Franklin, Lewis and Warren; and since the gradual removal of the Indians, they are now (1841) believed to be on the increase. They have been extirpated from Massachusetts, but are still found in Maine, Vermont and New Hampshire. Godman has erroneously stated that they are not known south of Maine; and this error has been magnified by subsequent copyists, who assert that it is not found in the State of Maine. It existed formerly much nearer the Atlantic coast; for we learn from Dunlap, that a pair of moose were once sent from Fisher's island to England.

The moose is a timid, wary animal; and its senses of hearing and smelling are so acute, that it requires the greatest caution on the part of the hunter to approach it. During an expedition of several weeks through the counties of Hamilton, Franklin and Essex, although their tracks were almost daily visible, yet we never had an opportunity of shooting a single individual.

The moose furnishes an excellent material from its hide for moccasins and snow-shoes. The best skin is obtained from the bull moose in October, and usually sells for four dollars. They were formerly so numerous about Raquet lake, that the Indians and French Canadians resorted thither to obtain their hides for this purpose; and hence we have the origin of the name of that lake, the word *raquet*, meaning *snow-shoes*. They still exist in its neighborhood.

The moose, when pursued, trots off with great rapidity, but in an awkward manner, its hoofs at the same time making a cracking noise. At this gait it soon leaves the hunter far behind, stepping with great ease over fallen timber of the largest size. When hard pressed by the hunters on snow-shoes, if it breaks up into a gallop, they are sure of overtaking it soon. Its flesh is much esteemed, and the meat of the young can scarcely be distinguished from the best veal. The nose and tongue are particularly considered great dainties. The moose, when taken young, is easily



domesticated, and has been used in this State for draught. I am not aware, however, that they possess any advantage for such purposes over our common beasts of burden; and their preference for twigs and bark of trees, instead of grasses, would render them not very desirable to the farmer who cared for the growth of his plantation.

The moose inhabits the northern parts of both continents. In America, they range to the Arctic Sea; and I am enabled to state, from personal knowledge, that their extreme southern limit along the Atlantic coast is  $43^{\circ} 30'$  in the State of New-York.









LITH. OF RICH. H. PEARCE, ALBANY.

MUSTELA CANADENSIS.  
FISHER OR BLACK CAT.

# THE FISHER.

MUSTELA CANADENSIS.

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In the "Zoology" of the State, the skull, only, of the fisher is figured; Dr. Dekay not being able at the time of the publication, to procure a perfect specimen. The Regents of the University, for the purpose of supplying this defect in the illustrations of the Mammalia, directed a drawing and engraving to be made from the beautiful specimen in the State Cabinet, which was taken in the town of Ohio, Herkimer county, N. Y., in the month of January, 1851. (See figure on the preceding page.)

The following remarks on the fisher are copied from Dekay's Zoology of New-York:

The fisher or black cat of our hunters, is a large and powerful animal, standing nearly a foot from the ground. It was formerly very abundant in this State, but is now confined to thinly settled northern districts. Twenty years ago they were numerous in the western part of the State, where they are now scarcely ever seen.. It is a nocturnal species, and lives chiefly on the smaller quadrupeds, but also devours frogs, fish and serpents. It climbs trees with great ease, and takes up its abode in the trunk of a tree. It appears to prefer marshy wooded swamps, and the vicinity of lakes and water-courses.

The name of *fisher*, which has been censured as not applicable to this animal, is, however, that by which it is best known, and which it has received from its characteristic habits. Richardson states that it feeds on the hoards of frozen fish stored up by the residents. We are informed by a person who resided many years near Lake Ontario, where the fisher was then common, that the name was derived from its singular fondness for the fish used to bait traps. The hunters were in the practice of soaking their

fish over night, and they were frequently carried off by the fisher whose well known tracks were seen in the vicinity. In Hamilton county it is still numerous and troublesome. The hunters there have assured me that they have known a fisher to destroy twelve out of thirteen traps in a line of not more than fourteen miles in length. It brings forth two young annually. Its geographical range is included between the fortieth and seventieth parallels of latitude, extending across the continent.



( C. )

CATALOGUE

OF

MINERALS, GEOLOGICAL SPECIMENS AND FOSSILS

ADDED TO THE

State Cabinet of Natural History,

FROM JANUARY 1, 1851, TO JANUARY 1, 1852.

1874.

1874/75

TABLE OF CONTENTS

THE HISTORY OF THE STATE

OF THE STATE

# MINERALS.

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## DONATIONS

To the State Cabinet of Natural History, during 1851.

From HAMILTON FISH, late Governor of the State of New-York.

(Governor FISH received the following as a present from Governor FLOYD, of Virginia. He desired to mark his appreciation of the donation, by placing it in the "State Cabinet of Natural History.")

1. *Native Rock Salt*, found in sinking the Salt Wells of Washington and Smyth counties, Virginia. (Two specimens.)
2. *Table, or Dairy Salt*, made at the Salt Wells of Washington and Smyth counties, Virginia.
3. *Common Salt*, made at the Salt Wells of Washington and Smyth counties, Virginia.
4. *Coarse Salt*, made at the Salt Wells of Washington and Smyth counties, Virginia.
5. *Gypsum*, from Washington and Smyth counties, Virginia. (Three varieties.)
6. *Primitive Marble*, from Rockbridge county, Virginia.
7. *Iron Ore*, (Limonite ?) From Graham's Works in Wythe county, Virginia. Also found throughout South-western Virginia and East Tennessee. (Two specimens.)
8. *Iron Ore*, ( ) From Sharpe's Iron Works, Washington county, Virginia.
9. *Lead Ore*, from Smyth county, Virginia. (Two specimens.)



10. *Lead Ore*, from Albemarle and Wilson counties, Virginia.  
(Two specimens.)
11. *Lead Ore*, ( ) From Wythe county, Virginia. (Five specimens.)
12. *Crystalized Quartz*, from Carroll county, Virginia. (Three specimens.)
13. *Copper Ore*, (copper pyrites?) from Grayson county, Virginia. (Three specimens.)
14. *Cannel Coal*, from Kenhawa county, Virginia. (Three specimens.)
15. *Semi-bituminous Coal*, from Wythe county, Virginia.

FROM JOHN H. SCATTERWOOD, of Albany.

A specimen of SULPHURET OF IRON, from Ohio.

FROM JAMES H. SILL, of Argyle, Washington county.

A specimen of GRANITE, containing molybdenite, broken from a boulder, found in North Argyle, Washington county.

FROM HOOD & TOBEX, of Albany.

A specimen of native CINNABAR, (red sulphuret of mercury,) from California.

FROM PETER OBERIST, of Albany.

A specimen of SLAG, from the Crane Iron Ore.

FROM JULIUS RHOADES, Esq., of Albany.

Specimens of CALCAREOUS TUFFA, (petrified moss and wood,) from Marcellus, Onondaga county.

FROM DAVID NOBLE, 2d, of Johnsburgh.

Two specimens of GRAPHITE, from the farm of A. Noble, Johnsburgh, Warren county.

FROM D. A. HAWLEY, of Albany.

Two specimens of IRON ORE, from the south-eastern part of [Putnam county, N. Y.

FROM EDWARD MURRAY, of West Troy.

A specimen of MARBLE, from Ulster county, N. Y.

From J. F. AMES, of Manchester, N. H.

A QUARTZ CRYSTAL, from Canterbury, N. H.

From Dr. J. S. CONKEY, of Antwerp, Jefferson county, N. Y.

A specimen of MILLERITE, (sulphuret of nickel,) from Antwerp, Jefferson county.

A specimen of CACOXENITE, (chalcodite of Shepard,) Antwerp, Jefferson county.

A specimen of SPATHIC IRON, from Sterling Iron Mine, Antwerp, Jefferson county.

Presented by PIERRE VAN CORTLANDT.

A specimen of IRON, made from the iron ore discovered at Anthony's Nose, in the Highlands, in blasting for the tunnel in the Hudson River Railroad.

From LEONARD WILBUR, of Wales, Erie county, N. Y.

A specimen of SEPTARIA, found on his farm in Wales, Erie Co., N. Y.

From RUSSELL COLE, of Troy.

A specimen of CALIFORNIA QUARTZ.

A specimen of PEBBLES, cemented together by iron, which usually overlays the gold bearing sand.

From JOHN J. MOAK, of New Scotland, Albany county.

Several stems of ENCRINITES, from New Scotland; also, Specimens of INDURATED CLAY.

From MICHAEL CLARKE, of Albany.

A water-worn PEBBLE, resembling a potato.

From the Hon. E. T. SMITH, of Suffolk county, N. Y.

Several PEBBLES from the shores of Long Island.

Specimen of SAND from the beach of Long Island.

From BENJAMIN KNOWER, of Onondaga Hill, Onondaga Co.

A specimen of COPPER ORE, in quartz.

## LIST OF MINERALS

FURNISHED FOR THE

### STATE CABINET OF NATURAL HISTORY,

BY FRANKLIN B. HOUGH, M. D.,

OF SOMERVILLE, ST. LAWRENCE COUNTY, N. Y.

---

**SPECULAR IRON ORE**, from an island in Muscalunge lake, Theresa, Jefferson county, where it has been wrought to some extent; but the great quantities of iron pyrites with which it is associated, will greatly impair if not entirely destroy its value.

**SPECULAR ORE WITH IRON PYRITES.** Locality of preceding.

**IRON PYRITES.** Do.

**SULPHATE OF BARYTES.** Do.

**MALACHITE.** Do.

**DYSYNTRIBITE.** Do.

**SPONGY QUARTZ.** Locality of preceding. This is formed by the removal by decomposition of sulphuret of iron from the quartz rock in which it is disseminated. The specimen exhibits every stage of the process.

**GALENA.** Macomb, St. Lawrence county.

**LABRADORITE**, from a large boulder on the shore of the St. Lawrence, near Ogdensburgh.

**DYSYNTRIBITE.** A new species described in the proceedings of the American Association, New Haven, 1850, p. 311.

This name (suggested by the difficulty with which it is pulverized in a mortar,) has been given by Prof. Charles U. Shepard, of Amherst College, to the variegated serpentine almost invariably associated with the red specular iron ore of Northern New-York.



So uniform is this association that I have become accustomed to regard it as a reliable indication of ore.

This mineral is referred to in the annual and final reports of the geological survey of this State in the following places:—Fourth annual report, p. 74, where it is called serpentine. “It occurs near the natural bridge in Lewis county, and is susceptible of a fine polish.” This is the only locality hitherto noticed in which this mineral is of sufficient solidity in mass, to be wrought into articles of utility.

Final Report of 2d district, p. 68, mentioned as serpentine, accompanying iron ore.

Do. pp. 71, 94, 95, where it is noticed as an associate of iron ore.

Do. p. 96, where it is described as serpentine breccia.

Do. p. 376, mentioned as serpentine associated with iron ore at the Shurtliff ore bed in the town of Philadelphia, Jefferson county.

Do. p. 377, also spoken of as an associate of ore at the Sterling iron mine, Antwerp, Jefferson county.

Mineralogical report, p. 274, Lewis county, mentioned as serpentine.

Third Annual Report of Regents on State Cabinet, p. 31, where it is named “Brecciated black Serpentine.”

**HOUGHITE**, 3 specimens. This is a new species, described by Prof. C. U. Shepard, in the Transactions of the American Association, New-Haven, 1850, page 314. It occurs in Gouverneur, St. Lawrence co., near the southwestern edge of the town, one and a half miles north of Somerville village. Its associates are serpentine in large crystals imperfectly developed,—phlogopite of a reddish yellow cast, and spinelle often in small brilliant crystals of a reddish color, or more rarely an inch on a side. Dolomite, chondrodite, and blue amorphous spinelle occur in the vicinity.

The rock in which these occur is white limestone, rising in this place but a slight distance above the general level, and the deposit is apparently limited to a few feet in extent.

From observations made since the description was published, there is reason to believe that this mineral is pseudomorphous of spinelle. It is, however, but very rarely crystalized, and occurs usually in nodular masses, with a white or pearly grey color externally and reddish brown within. A crystal of spinelle has been noticed in some instances as a nucleus to these globules. This locality is mentioned in the State Report on Mineralogy as furnishing serpentine and mica.

ZIRCON, having the prevailing form of the following figure, oc-

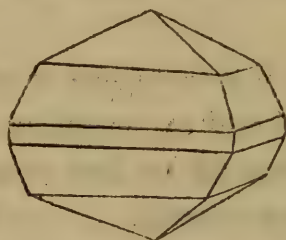


Figure 1.

curs one mile from Rossie village, St. Lawrence county. From its occurrence at different localities in the same range for three or four miles, there may be reason to hope that it will hereafter be detected in considerable quantities. Hitherto it has been found only in detached crystals, sparingly scattered through white limestone, and associated with apatite, graphite, loxoclase, &c.

The form here represented is not figured in the mineralogical report of Prof. Lewis C. Beck, and is an interesting addition to the crystalline forms of this mineral. It seldom occurs with the symmetry of the figure, but is usually greatly distorted by the extension of some of the planes at the expense of the others. The intervening prism is at times obliterated. The terminal planes are usually the most brilliant, while those which separate these from the prismatic portion have a dull wrinkled surface, with occasional striæ in the direction of the natural cleavage. Specimens of these have been placed in the State Cabinet.

**SULPHATE OF BARYTES.** Limpid crystals of this mineral, from one line to half an inch in extent, have been noticed associated with calcite and spathic iron, at the iron mines in Rossie, St. Lawrence county. They are of especial interest, as representing crystalline forms not hitherto attributed to this State. The following figures exhibit the forms observed at this locality.

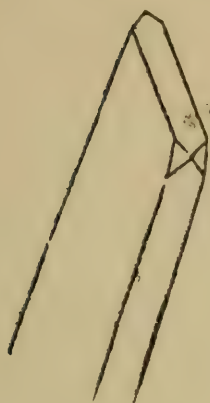


Fig 2.



Fig 3.



Fig 4.

At times, the thickness of the tabular crystals greatly exceeds their length, and they become rectangular prisms, with flat summits and bevelled edges.

Heavy spar is among the rarest of the associates of specular iron in Northern New-York, although it occurs among the white limestone at some localities, in great abundance.

F. B. HOUGH.



1871  
1872

1873

1874  
1875

( D. )

ADDITIONS

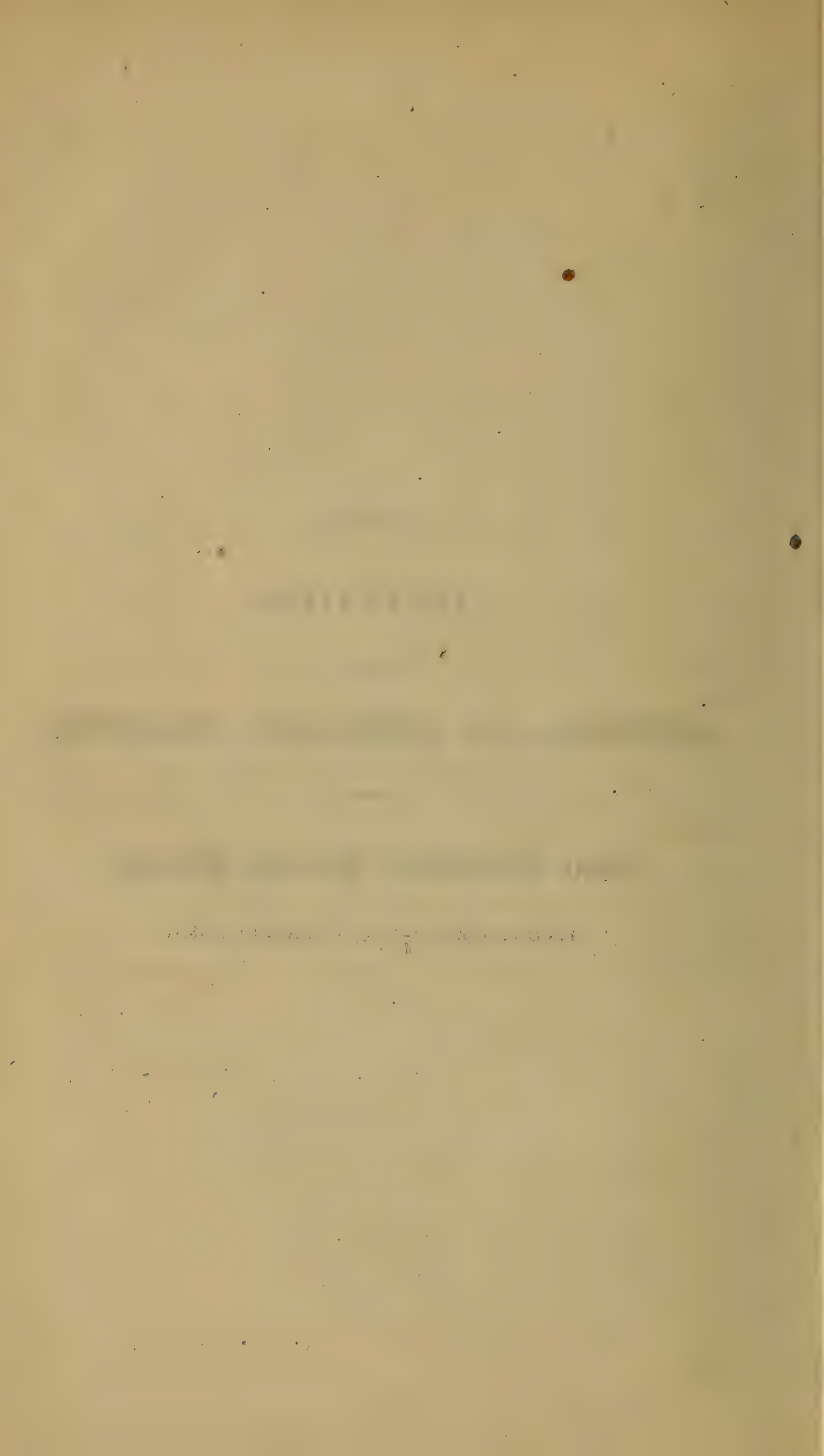
TO THE

HISTORICAL AND ANTIQUARIAN COLLECTION,

IN THE

State Cabinet of Natural History,

FROM JANUARY 1, 1851, TO JANUARY 1, 1852.





## DONATIONS.

---

FROM LEWIS McMULLEN SELKIRK, of Bethlehem, Albany county.  
An Indian chert ARROW HEAD, (large.) Found in Bethlehem,  
Albany co.

FROM Prof. EBENEZER EMMONS, of Albany.  
A fragment of INDIAN POTTERY. Found on the banks of the  
Hudson river, six miles above the High Falls.

This fragment, which is two inches long and one and a half  
wide, represents the head and about one half of the shell of a tor  
toise. It appears to have been a portion of a pipe.

FROM FERDINAND WIEL, of Albany.  
A specimen of CLOTH made of the bark of the bread fruit tree,  
by the natives of one of the islands in the Pacific ocean.

FROM JAMES H. SILL, of Washington co.  
A piece of one of the OAK TREES cut down in the town of Argyle,  
Washington county, in the year 1797, for the purpose of  
constructing a navy, under the administration of John  
Adams.

The following communication of Mr. Sill, accompanies the  
specimen :

"I have taken the liberty to send to the State Cabinet of Natu-  
ral History a piece of oak taken from a tree which grew in the  
town of Argyle, Washington county, N. Y., and was cut down  
in the year 1797, under the administration of John Adams, to be  
used in building a navy.

My uncle, David Sill, informs me, that there were at that time  
two gigantic oaks which grew near together, that were cut for

the above named purpose. One of them was hewed, and afterwards drawn by fifteen yoke of oxen, with the forward end elevated on a huge wood sled. When they had got out of the woods, a "stump speech" was delivered by one of the party from the forward end of the stick, as a stage. After passing the bottle around, according to the custom of the times, they moved on with shouts of overflowing patriotism that almost seemed to inspire even the dull ox with more than his ordinary ambition, and thus delivered the stick at a place then called Dumont's Ferry, a short distance below Fort Miller.

The other tree, of which the piece presented to the State Cabinet is a part, was cut and scored on two sides, and partly hewed; but owing to some small defect it was abandoned. About twelve years subsequent to that time, it was split into rails and laid up into fence. Only a few of the rails now remain, and it was with some trouble that I succeeded in obtaining a few pieces which bear the marks of the axes of those who scored and partly hewed the stick; one of which is seen on the piece herewith presented.

JAMES H. SILL.

From the Hon. E. T. SMITH, of Suffolk county, N. Y.

Two Indian ARROW HEADS, made of greasy quartz. One do, made of yellow jasper.

From A. HEYER BROWN, of Albany.

A STONE AXE, eleven inches in length. This relic was found several feet below the surface, in digging a well at Poughkeepsie, Dutchess county.

From Mrs. MERCY VALENTINE, of Albany.

A military CAP PLATE, of the Revolution. *Design.*—The American Eagle with extended wings, surmounted by thirteen stars. *Motto*—"Unity is Strength," 1776.

From ABRAHAM J. WARNER, of Richmondville Schoharie co.

An ancient MILL-STONE, plowed up in the town of Conesville, Schoharie county, in the summer of 1850. The stone is graywacke, twenty inches in diameter and two inches thick, and was used in the early settlement of the country in a hand-mill.

From the Rev. M. S. GOODALE, of Amsterdam, Montgomery co.  
**A CAMP KNIFE**, dug up by James Stewart, Esq., of Guy Park, formerly the residence of Sir Guy Johnson, of tory memory in the days of the Revolution. The knife is a relic of those times.

From THEODORE MILLS, of Cherry Valley, Ashtabula, co., Ohio.  
**STONE CHISEL**, made of greenstone.  
**STONE DEER-SKIN DRESSER**, made of greenstone.  
**STONE AXE**.  
**WHITE CHERT ARROWHEAD**.

The following communication accompanies the relics.

*"To the Regents of the University of the State of New-York :*

*"Gent.—Please accept the Indian hatchet, arrow and knife, which are herewith presented to you.*

*"I picked them up on my farm in the Cherry Valley, Ashtabula county, Ohio.*

*"Deeming all Indian implements acceptable as presents to the Geological Hall, I take the liberty of presenting them.*

**THEODORE MILLS."**

*Cherry Valley, Ohio, June 20, 1851.*

From the Rev. JOHN N. CAMPBELL, D. D., of Albany.

**A CUP**,<sup>r</sup> turned from one of the red cedar gate posts of Fort William Henry. The gate posts were placed in the ground A. D. 1755, and removed A. D. 1837. These posts are now in the State Cabinet.

**A BEAD BASKET**, made and presented by PETER LE PAGE, jr., one of the pupils belonging to the New-York Institute for the Blind.

**A specimen of "Pot Rock,"** from Hurl Gate channel, near New-York. Procured and forwarded by MONS. MAILLEFERT, the engineer employed in removing the obstructions to navigation in Hurl Gate.

**A piece of COPPER SHEETING**, taken from Way's Reef in Hurl Gate channel. Large quantities of this were obtained while



removing the reefs in Hurl Gate, which had been stripped from vessels which had struck against them at different times. Presented by Mons. MAILLEFERT, engineer, &c.

From PETER G. BRADT, of Bethlehem, Albany co.

A STONE CHISEL. Also, two regularly rounded PEBBLES.

From W. A. HOTCHKISS, of Albany.

AN IRON KEY, taken from the Halls of the Montezumas, Mexico, on the 12th day of June, 1848, and which originally belonged to the Palace Garden gate.

From HENRY B. TODD, of Mott Haven, Westchester co. N. Y.

A part of the SHOT RACK of the British frigate Hussar, with four cannon balls. Also a musket, and a bayonet and scabbard.

"The frigate Hussar, was lost December 15th, 1780, off Stoney Island, on Westchester county shore, having struck Pot Rock, in Hurl Gate. She was loaded with troops, ammunition, and supplies for the British army in this country. The troops and crew had barely time to reach shore, before she sunk, with seventy American prisoners, who were in irons and could not be rescued. These relics were obtained by Messrs. Pratt & Howe, in the month of August, 1851, by the aid of Taylor's sub-marine armour, after having been buried over seventy years. The wreck lies in water seventy-six feet deep, at high water."

From BENJAMIN KNOWER, of Onondaga Hill, Onondaga co.

A clay DRINKING CUP, in the form of a duck, from the Sandwich Islands. Also, a HEAD DRESS, made of sea shells.

## SCHEDULE OF ARTICLES

*Obtained from Indians residing in western New-York and on Grand River in Upper Canada, being the product of their own handicraft and manufacture, for the Historical and Antiquarian collection in the State Cabinet of Natural History, by Lewis H. Morgan, Esq., of Rochester.*

The following extract is taken from Mr. Morgan's report to the Regents of the University in relation to the Indian articles mentioned in the schedule.

"By a reference to the schedule, it will be perceived that the additions the present year are at least equal in variety and interest with those of the preceding. Some of them are of the same name and general character; but in such cases the article itself will be found to be either a more perfect specimen, different in some essential particular, or from some other locality. A portion of the articles were obtained of the Mohawks, Onondagas, Cayugas, Senecas and Tuscaroras, who, to the number of two thousand four hundred and fifty, now reside upon a large reserve secured to them by the British government on Grand River in the Niagara peninsula, in Upper Canada. But the residue and the chief portion were obtained from the Senecas in the western part of the State."

1. Gä-däs-hä. SHEAF for carrying arrows.
2. Gä-je-wä. WAR CLUB, with ball head.
3. Gä-such-tä Ote-ko-ä. BELT OF WAMPUM.
4. Ote-ko-ä. STRING OF WAMPUM.
5. Ah-so-quä-tä. STONE PIPE.
6. Da-gä-yä-sont. SILVER CROSS, 8 inches by 5.
7. do. do. 6 inches by 4.
8. do. do. 3 inches by 1½. 2 specimens
9. Au-ne-as-gä. SILVER BROACH, 4 inches diameter.
10. do. do. 3 inches diameter.
11. do. do. 1½ inches diameter. There  
are in all 13 broaches of various sizes.
12. do.
13. do.
14. Au-ne-ä-hus-hä. FINGER RING. 4 specimens.

15. Ah-was-hă. EAR RING. 1 pair.
16. Dă-yase-ta-hos-ta. SILVER HAT BAND.
17. Ont-wis-tă-ne-un-dă-quă. SILVER BEADS. (Long.)
18. O-wis-tă-no-o O-sta-o-quă. ROUND SILVER BEADS. (Variety.)
19. Gă-ose-hă. BABY FRAME.
20. Gă-swă-hos-hă. BABY FRAME BELT.
21. Gă-nose-gă. BABY FRAME BELT.
22. do do
23. Da-ya-he-gwă-hus-ta. HAT BAND OF BROACHES.
24. Gă-yă-ah. SATCHEL.
25. Gă-ya-äh. WORK BAG.
26. Ya-wa-o-dă-qua. PIN CUSHION. (2 spec.)
27. Gă-kă-ah. KILT. (Made of fawn skin.)
28. Got-ko-on-dă Gise-hă. DEER SKIN LEGGIN.
29. Da-yunt-wă-hos-tă. DEER SKIN WAIST BELT.
30. Yunt-ka.to-dă-tă. DEER SKIN SHOULDER BELT.
31. Ah-tă-quă-o-weh. MOCCASIN.
32. do do
33. do do
34. HAIR ORNAMENT.
35. SHOT POUCH.
36. Găt-go-ne-as-heh. HOMMONY BLADE. (2 spec.)
37. do do (A chain cut on the  
end of the handle.)
38. Ya-ă-go-jen-ta-quă. BREAD TURNER.
39. Ah-do-gwă-seh. WOODEN LADLE.
40. do do (2 specimens.)
41. do do
42. Ah-do-gwă-seh. BARK LADLE.
43. Ah-do-gwă-seh. WOODEN SPOON.
44. Gă-na-quă. BARK BARREL. (3 sizes.)
45. Gă-o-wă. BARK TRAY. (6 sizes.)
46. Gă-oo-wă. BARK SAP TUB.
47. Gă-te-as-hă. GLASS BEADS.
48. Gă no-să. CONCH SHELL BREAST PLATE.
49. Ah-dă-dis hə. CANE. (2 specimens.)
50. Ah-so-quă-tă. PIPE, made of Missouri stone.
51. do do made of black stone.
52. do do made of Nodule.



53. Ah-so-quā-tā. PIPE, made of wood and lead.
54. Gä-gä, ne-as-heh. BELT AND KNIFE.
55. Gus-dä-wah-sä. TURTLE SHELL RATTLE.
56.       do                               do
57. O-no-gä Gus-da-wah-sa. HORN RATTLE.
58. Gus-to-weh. HEAD DRESS.
59. Gä-wä. MOCCASIN AWL.
60.       BUNCH OF SUMAC.
61. O-yeh-quā-ä-weh. INDIAN TOBACCO.
62. Gäs-tät-he-o Gä-yä-ah. FAWN SKIN BAG.
63. Gus-dä-wa-sä Yen che-no-hos-ta. KNEE RATTLE, of deer  
      hoofs.
64. SPEAR used in the war of 1812.
65. Gä-ne-a-ga-o-dus-ha. WAR CLUB.
66. Ya-o-dä-was-tä. INDIAN FLUTE. (2 specimens.)
67. Wä-a-no. INDIAN BOW.
68. Gä-ne-ah. BALL BAT.
69. Gä-no. ARROW. (Pointed with deer's horn.)
70. Gä-no. FEATHERED ARROWS. (18 specimens in sheaf.)
71. O-dä-da-one-dus-tä. EYE SHOWERER.
72. Yun-ga-sa. TOBACCO POUCH, made of the foot and leg of the  
      snapping turtle.
73. Gä-go-sä. FALSE FACE.
74. O-ä-ta-ose kä. MOOSE HAIR BURDEN STRAP.
75. Gus-hä-ah. MOOSE HAIR AND BARK BURDEN STRAP.
76. Gus-hä-ah. BURDEN STRAP, (bark thread and worsted.)
77. Gus-hä-ah.       do       (bark with moose hair figures.)
78. Gä-te-äs hä Gä-a-o-tä-ges. GRASS SHOULDER ORNAMENT.
79. Yout-kä-do-quä. BASKET FISH NET.
80.       HUSK MOCCASINS, (one pair.)
81. Gä-a-sken-dä. BARK ROPE—made of basswood filaments.
82.       do               do       2 specimens from Tonawanda.
83. Ose-gä. SKEIN OF SLIPPERY ELM THREAD.
84. Ose-gä.               do       (colored.)
85.       do       TWISTED INTO STRINGS.
86. Ose-gä. STRIPS OF SLIPPERY ELM BARK.
87. O-sä. SKEIN OF BASSWOOD FILAMENTS.
88. O-sä. STRIPS OF BASSWOOD BARK.
89. Go-yo-ga-ace. FINGER CATCHER.

- 891 $\frac{1}{2}$ . BIRD TRAP FOR CATCHING QUAILS.
90. Gus-hä-ah. DEER HAIR BURDEN STRAP.
- 90 $\frac{1}{2}$  Gus-hä-ah. BASSWOOD BURDEN STRAP.
91. Ne-us-tase-ah. BASKET SIEVE.
92. Gase-hä. COVERED BASKET.
93. O-gä-kä-ah. OPEN-WORK BASKET.
94. Ta-gase-hä. MARKET BASKET.
95. Gä-geh-dä. JAVELIN, OF SHOOTING STICK.
96. Ah-de-gwas-hä. HOMINY BLADE.
97. PADDLES. (6 specimens.)
98. Yun-des-ho-yon-dä-gwat-hä. POP CORN SIEVE.
99. An-ne-us-gä. SILVER BROACH. (9 specimens on a card.)
100. An-ne-us-gä. do (20 specimens on a card—  
small.)
101. Gä-ka-ah. SKIRT.
102. Gise-hä. LEGGIN FOR FEMALE. (1 pair.)
103. Ah-de-a-dä-we-sä. FEMALE OVER-DRESS.
- 103 $\frac{1}{2}$  E-yose. BROADCLOTH BLANKET.
104. O-sta-o-quä. BEAD NECKLACE.
105. Gä-ka-ah. SKIRT FOR FEMALE.
106. Gise-hä. LEGGIN FOR FEMALE. (1 pair.)
107. Ah-de-a-dä-we-sä. OVER-DRESS FOR CHILD.
108. Yen-nis-ho-quä-hos-ta. WRISTBANDS OF BEADS. (1 pair.)
109. O-ha-dä. PORCUPINE QUILLS.
110. DEER'S HAIR, used for making burden straps, &c.
111. Da-ya-no-tä-yen-dä-quä. SNOW BOAT.
112. Gä-wä-sä. SNOW SNAKE. (5 specimens.)
113. Gä-ne-ko-wä-ah. BURDEN FRAME.
114. Gä-no-sote. BARK HOUSE.
115. Gä-snä Gä-o-no. BARK CANOE.

Chas. D. Walcott.

( E. )

References to various Writings relating to the NATURAL HISTORY of New-York, that have appeared during 1851.

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## ZOOLOGY.

*Boston Journal of Natural History.*

Vols. 4, 5 and 6. Hentz's Description of the Araneides of the United States.

Vol. 6, p. 247. Observations on the Fishes of Nova Scotia and Labrador, with descriptions of new species. By Horatio R. Storer.

*Silliman's Journal. New Series.*

Vol. 11, p. 351. Infusoria in Hudson river ice, found by Professor Bailey, of West Point.

*Journal of the Academy of Natural Sciences, of Philadelphia. New Series. Vol. 2. (4to.)*

Page 99, 139. An attempt to classify the Longicora Coleoptera of the part of America, north of Mexico. By John L. Le Conte, M. D.

*Proceedings of the Academy of Natural Sciences, of Philadelphia.*

Vol. 5, p. 310. Synopsis of the species of Donacia (Fabr) inhabiting the United States. By John L. Le Conte, M. D.

Page 331. Synopsis of the Lampyrides of temperate North America. By John L. Le Conte, M. D.

*Annals of the Lyceum of Natural History of New-York.*

Vol. 5, p. 68. Description of the Selene Argentea of Lacépède, a fish whose existence has been doubted. By J. Carson Brevoort.



## MINERALOGY, GEOLOGY AND PALÆTOLOGY.

*Quarterly Journal of the Geological Society of London.*

- Vol. 7, p. 212. Sir John Richardson on some points of the Physical Geography of North America, in connection with its physical structure.
- p. 215. Dr. John J. Bigsby on the Erratics of Canada.
- p. 238. Sir Charles Lyell on Fossil Rain Marks of the recent Triassic and Carboniferous Periods.
- p. 247. W. E. Logan on the occurrence of a track and foot prints of an animal in the Potsdam sandstone of Lower Canada.
- p. 361. On the Houghite of Prof. Shepard. By S. W. Johnson.
- p. 395. Dr. Hough. New Localities of Minerals in St. Lawrence and Lewis counties, N. Y.

*American Association for the Advancement of Science. (Fourth Meeting.)*

- Page 311. On Dysyntritite from St. Lawrence county, N. Y. By Prof. Shepard.
- Page 314. On Houghite, from Oxbow and Rossie. By Professor Shepard.
- Page 383. Analysis of Phlogopite Micas, from St. Lawrence county, N. Y. By William J. Craw.

*Proceedings of the Boston Society of Natural History.*

- Vol. 3, p. 379. Mr. Wells on the Phosphate of Lime, at Crown Point, N. Y.

## MINERALOGY.

*Silliman's Journal. New Series.*

- Vol. 13, p. 117. Lievrite, found in Monroe, Orange county, N. Y., at the O'Neil Iron Mine.
- Vol. 13, p. 264. Carbonate of Strontian, found in the rocks of the Clinton group in Oneida county, N. Y. By Prof. O. Root.

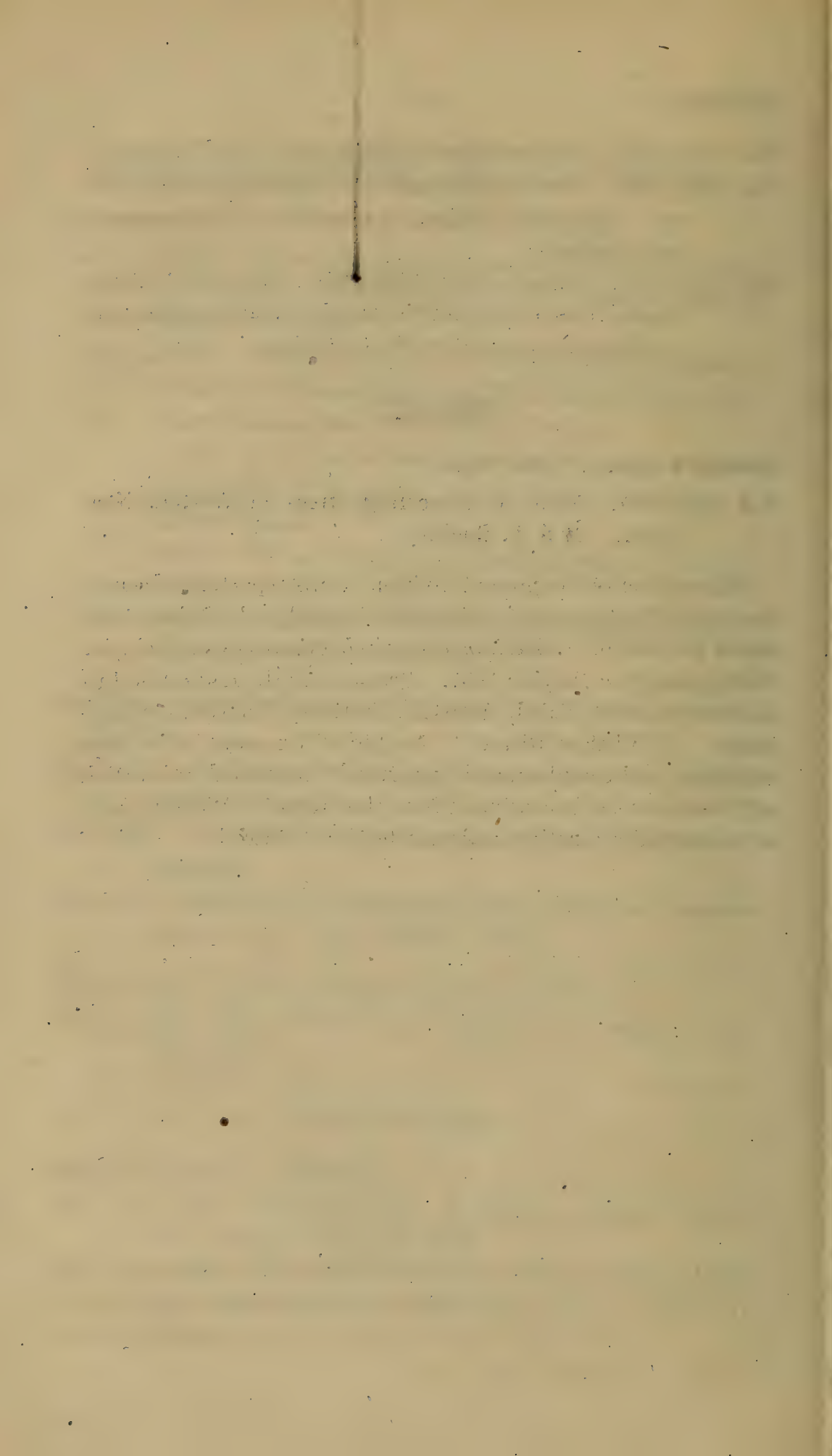
- Vol. 13, p. 370. On Octahedral Olbigist Iron. By T. S. Hunt.
- Vol. 13, p. 392. Two new Minerals from Monroe, Orange county. By Charles Upham Shepard, M. D. *Dimagnetite* and *Jenkinsite*.
- Vol. 13, p. 416. Allanite, from West Point. By Dr. C. Berge-  
mann, from Poggendorff's Annalen, and communicated  
to Silliman's Journal by W. G. Lettsom.

## BOTANY.

*Silliman's Journal. New Series.*

- Vol. 13, p. 397. Notice of some large trees in Western New-York. By S. B. Buckley.

[The subject of the present division of this report, has been taken up in the Appendix of Silliman's Journal, vol. 13, May 1852, under the title of "*American Zoological, Botanical and Geological Bibliography for the year 1851*. Prepared at the request of Professor Spencer F. Baird, Assistant Secretary Smithsonian Institution. By Charles Girard." As this will necessarily be more extensive and complete, and be regularly continued, this article will hereafter be discontinued from this report. We have however inserted the notices collected to May 1, 1852.]





( F. )

Description of the means employed to remove the Rocks at Hurlgate, by Submarine Engineering. By E. Meriam, (accompanying a specimen of the Rock presented to the State Cabinet.)

NEW-YORK, January 7th, 1852.

DR. T. R. BECK,

*Sec. of the Board of Regents of the*

*University of the State of New-York:*

Dear Sir—In the month of October, 1849, M. Maillefert, a French Engineer, came to the City of New-York from Nassau, New Providence, for the express purpose of making proposals to remove the rocks from the channel of Hurl Gate by a new mode of Submarine Engineering. He proposed to break and scatter the rocks by exploding powder on the surfaces under water using the water as a fulcrum and igniting the charge by means of a galvanic battery.

His proposition was communicated to Congress and the Committee on Commerce of the House of Representatives recommended an appropriation of thirty thousand dollars for this object and the amount was included in the appropriations of the River and Harbor Bill, which passed the House but was lost in the Senate at the close of the session for want of time to act upon it.

An application was subsequently made to the Legislature of this State for an appropriation to cover the expenses of removing three of the most dangerous rocks from this great thoroughfare, but the application was unsuccessful.

In the summer of 1851 proceedings were commenced for raising the required amount by subscriptions to a loan to be repaid by the Government of the U. S. when Congress shall have made a special appropriation therefor.

The raising money by subscriptions to a loan has thus far been successful, and M. Maillefert has thus been afforded the opportunity of demonstrating the value of his discovery.

In the month of August last he commenced operations in the channel of Hurl Gate for breaking down and scattering Pot Rock. This rock was one of the most formidable obstructions in that great thoroughfare, which for two centuries had been a terror to navigators, and for near a century has been a reproach to the country, for the reason that no measures were taken to remove it.

At the depth of twenty-four feet below mean low water its length was two hundred and twenty-five feet, and width sixty feet. It had a depth of water on one side of sixty-two feet, and on the other of sixty feet. Its height was fifty-two feet—its apex reaching to within eight feet of the surface of the water. Its position was about midway in the channel where the current was very rapid, and a large and dangerous whirlpool was formed by it.

On the 20th of August two charges of 78 lbs. each were fired on this rock, which destroyed four feet in length of its top, and when twelve charges had been fired the whirlpool disappeared.

From the 20th of August to the 7th of November one hundred and forty-three submarine charges were fired upon Pot Rock. Twenty-seven of these were of 78 lbs. each, the residue of one hundred and twenty-five pounds each. The aggregate weight of the one hundred and forty-three charges was sixteen thousand six hundred and six pounds.

On the 7th of November, Lt. W. A. Bartlett, U. S. N. and Asst. in the Coast Survey, who had been detailed by Professor A. D. Bache, Supt. of the U. S. Coast Survey, to make surveys in Hurl Gate, made a survey of Pot Rock. The following communication from him states the result of his examination :

“HELL GATE,  $3\frac{1}{2}$  P. M., *Friday, Nov. 7th, 1851.*

“Mr. Meriam: Dear Sir—I have made a very complete examination of Pot Rock at low tide to day. I have to say now in



anticipation of the plotted sheet that there is not less than eighteen and a quarter feet of water on any part of Pot Rock at low tide to-day. As soon as possible I will give you the plans of reference to mean low water.

“Yours truly,

W. A. BARTLETT,

*U. S. N. and Assistant in the Coast Survey.”*

From the 7th of November to the 12th of December, ninety-one charges of one hundred and twenty-five pounds each, were fired upon Pot Rock. The aggregate weight of these ninety-one charges is eleven thousand three hundred and seventy-five pounds.

The number of charges fired from August 20th to Dec. 12th, is two hundred and thirty-four, and the aggregate weight of powder in the 234 charges is twenty-seven thousand nine hundred and eighty-one pounds.

The present surface of Pot Rock is very large, being equal to that of four full sized building lots, twenty-five feet by one hundred.

When M. Maillefert commenced operations on Pot Rock, he could only fire at high tide and during slack water. No charge could be fired on the rock while the tide was running. The tide turned very quick on the rock, the longest period for working being less than sixteen minutes, during which only two charges could be fired. In the early part of November he had broken down so much of the rock as to change the current to such an extent that he was enabled on the 20th of that month to fire thirteen charges in one day, at both high and low water, using sixteen hundred and twenty-five pounds of powder, or sixty-five kegs in a single days work.

When operations were commenced in August, there was but fourteen feet of water on the rock at high tide, now there is more than *twenty-five* feet. The greater the depth of water on the rock, the more effective is the force of the explosions.



One of Francis' Metallic Life-Boats was placed over a charge during the explosion, and received no injury. It was sometimes the case that vessels passing through the Gate, came close along side of Pot Rock at the time of the explosion of a charge, but in no case did any vessel receive injury from the force of the explosion.

Mons. Maillefert placed his boat containing the battery within sixty feet of the rock, when he fired the charge.

This enterprise presented two very important considerations. The *first* was the removal of the dangerous rocks from this great thoroughfare—the *second*, to afford M. Maillefert the opportunity of demonstrating conclusively the effect of his new system of blasting rocks under water without drilling, by using the water as a fulcrum. The result has been most satisfactory, and commerce, as well as science, will reap great and lasting benefits from the discovery, and men of science will be admonished to regard facts as far safer than theory to build upon.

I have forwarded to you, by Mr. D. K. Seaman, a large piece of gneiss, taken from Pot Rock, twenty-five feet below the surface, at high water. This fragment was broken from the body of the rock by means of the explosion of a charge fired upon it twenty-five feet below the surface. It may therefore be viewed as not only a rare, but a valuable specimen for the Geological Cabinet of the State of New-York.

Other rocks in the channel of Hurl Gate have been operated upon by M. Maillefert. A rock known as "Bald Headed Billy," has been entirely removed. This rock brought up a good many vessels. It was removed at an expense of five hundred dollars. Two rocks that lay near Pot Cove, opposite Mr. Edwin Hoit's mansion, have been entirely destroyed by eight submarine charges of one hundred and twenty-five pounds each.

Eleven charges have been fired upon "Frying Pan," and seven upon "Ways Reef." Four charges have been fired upon "Diamond Reef," in the Harbor of New-York. The weather is now too cold for submarine operations, and but little more can be

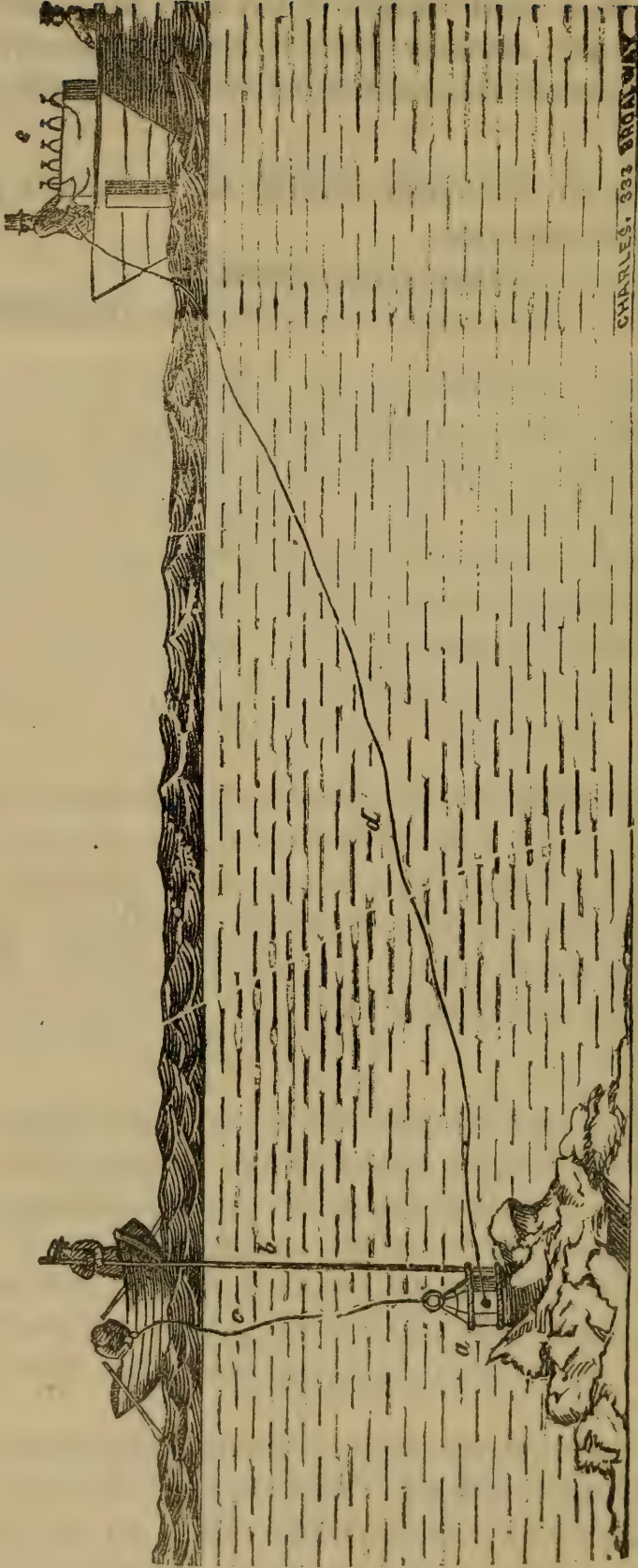
done on the rock until the spring, but what has already been accomplished with an outlay of less than eight thousand dollars, is worth hundreds of thousands of dollars to the country and to the world.

Annexed is an illustration showing M. Maillefert's plan of blasting rocks under water.

Yours very respectfully,

E. MERIAM.

# AN ILLUSTRATION SHOWING M. MAILLEFERT'S PLAN OF BLASTING ROCKS UNDER WATER.



- a.* Canister containing gunpowder, strongly lashed.  
*b.* Iron rod serving to guide the charge on the rock, by means of rings fixed on the canister.  
*c.* Rope to lower down the charge.  
*d.* Wire, or conductor, serving to ignite the charge.  
*e.* Powerful galvanic battery, to fire the charge.



( G. )

Materials belonging to the State, which have been used in publishing the Natural History, and the Annual Reports of the Regents of the University, received into the Geological Rooms, since the twelfth day of February, 1851.

The wood cuts used in the Reports of the Regents of the University for the years 1849 and 1850, illustrating the articles furnished to the Indian collection in the State Cabinet by Lewis H. Morgan, Esq.

Two wood cuts of Parhelia, observed by Dr. Hough and figured in the Annual Report of the Regents for the year 1850.

Twenty-one original colored drawings, from articles of Indian manufacture in the Indian collection in the State Cabinet of Natural History, and from which the wood cuts were made to illustrate Mr. Morgan's Report on the articles furnished by him to the collection.

Five original drawings of ancient remains of art, from which the Lithographs accompanying Doct. Hough's paper on Indian Antiquities were taken.

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*Materials belonging to the State, which are intended to be used in completing the publication of the Natural History, received into the Geological Rooms since the twelfth day of February, 1851.*

## DEPARTMENT OF PALÆONTOLOGY.

Received, July 24th, 1851, of John E. Gavit, three thousand impressions, each, from plates 21, 24, 32, 33, 41, 49, 50 and 51 (eight plates) for the second volume of the Palæontology.

Received, October 1, 1851, of Richard H. Pease, steel plates, Nos. 34, 34<sup>a</sup>, 35, 35, 36, 36<sup>a</sup>, 74, for the second volume of the Palæontology; also, three thousand printed impressions each of plates Nos. 20, 34, 34<sup>a</sup>, 35, 35, 36, 36<sup>a</sup>, 37<sup>a</sup>, 40<sup>f</sup>, 59, 66, 74, 78 for the second volume of the Palæontology.

Received, November 25, 1851, of Richard H. Pease, steel plates Nos. 38, 65, 67, 40<sup>d</sup>; also, three thousand printed impressions of each plate.

Received, December 13, 1851, of Richard H. Pease, eight steel engravings of fossils for volume two of the Palæontology. The plates are not numbered.

## DEPARTMENT OF AGRICULTURE.

### INSECTS.

Received of Richard H. Pease, the following steel plates of insects, viz: Nos. 6, 7, 8, 9, 10 and 11; also, three thousand printed impressions of each plate.

Received, May 22, 1851, of Richard H. Pease, the following steel plates of insects, viz: Nos. 12, 13, 14, 15, 16 and 17; also, three thousand printed impressions of each plate.

Received, October 1, 1851, of Richard H. Pease, three thousand printed impressions of plate A. of insects; also, steel plates of insects, Nos. 18, 19, 20 and 21.

Received, December 26, 1851, of Richard H. Pease, three thousand printed impressions each of plates, Nos. 22, 23, B, C, of insects; also, the steel plates B, C, of insects.

### FRUITS.

Received October 1, 1851, of Richard H. Pease, three thousand printed impressions each, of the following plates of Fruits. (Colored,) viz: Nos. 24, 25, 27, 28, 29, 32, 45, 46, 53, 56, 57, 70, 73, 69, 5<sup>a</sup> and 72.

Received December 1, 1851, of Richard H. Pease, Steel Plate 76, (Currants.)

Received December 26, 1851, of Richard H. Pease, three thousand printed impressions each, of the following Plates of Fruits, (Colored,) viz: Nos. 5, 6, 9<sup>d</sup>, 9<sup>d</sup>, 11<sup>d</sup>, 12<sup>d</sup>, 13<sup>d</sup>, 14<sup>d</sup>, 26, 37, 44, 47, 48, 49, 50, 51, 52, 54, 55, 58, 63, 74, 80, 81. Also Plate 44 of Fruits.

# APPENDIX.

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## REPORT

ON THE

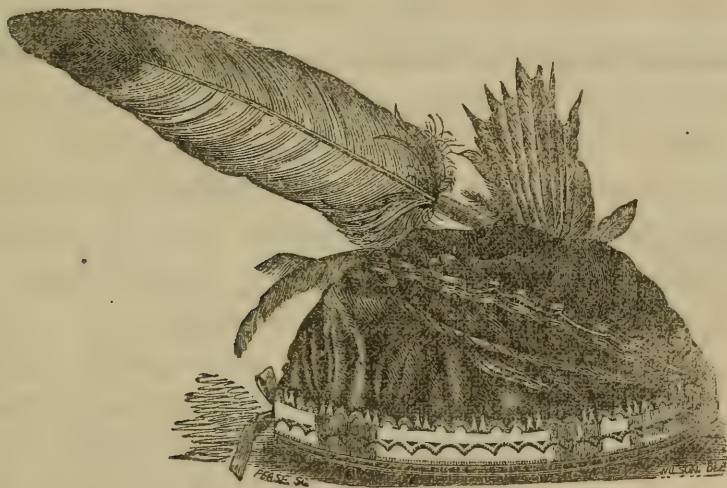
FABRICS, INVENTIONS, IMPLEMENTS AND UTENSILS

OF THE

# IROQUOIS,

MADE TO THE REGENTS OF THE UNIVERSITY, JAN. 22, 1851,

BY LEWIS H. MORGAN.



ILLUSTRATIVE OF THE COLLECTION ANNEXED

TO THE

## State Cabinet of Natural History,

With Illustrations

BY RICHARD H. PEASE, ALBANY.



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ORDERED TO BE PRINTED, BY THE ASSEMBLY, 1852.

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## REPORT.

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The Regents of the University having renewed their appropriation for the further enlargement of the Indian collection, and again committed its expenditure to the undersigned, he asks leave to submit the following

### REPORT:

It is an easy matter to bring together the fabrics and inventions of the modern Iroquois in sufficient completeness to illustrate the present condition of Indian society within the limits of the State. Their range and diversity are neither so wide, or so complicated, as to preclude the possibility of a minute exhibition of the articles, of every name, which are either of original or secondary manufacture. If the effort for their collection is continued for a few successive years, it will not only result in exhausting the subject, so far as their present fabrics are concerned, but, acting backwards upon the past, it will draw forth many ancient inventions which are now held in the memory of the aged, or in the grasp of tradition.

When every thing which the Iroquois can furnish of their present manufacture, or recall through tradition from the past, is brought into one collection, it is but a commencement of the interesting work of gathering together whatever will illustrate the inventive intellect of the Indian family. In a general, but correct view of this subject, it is unnecessary to discriminate, except for classification, between the fabrics and inventions of the Iroquois, and those of the Indian family at large. They are uni-

ted in one harmonious and connected system, sprang from a common mind, and all together are necessary to exhibit the artizan capacity and social condition of the Indian from the era of aboriginal occupation down to the present period, when Indian life, in some parts of the republic, is merged in comparative civilization.

While the attention of the Regents, and of the people of the State, is very naturally directed, in the first instance, to the fabrics of the Iroquois, a people with whom we stand in many interesting relations, it should not, and cannot properly be limited to them alone. A collection, worthy of the State, must necessarily take a wider range, and aim at a general and universal collection of the fabrics, inventions, implements and utensils of the whole Indian family: from the stone tomahawk of the Pequod, and the rude pottery of the Mobilian tribes, to the beautiful bark and moose hair basket-work of the Chippeway, and the delicate, bead-work embroidery of the modern Iroquois. A few years of well directed effort, with a small expenditure of money, would secure such a collection; one which would not only become as widely known as the Indian whose social history it proclaims, but would form an enduring monument to the enlightened munificence of the State.

By a reference to the schedule which accompanies this report, it will be perceived that the additions the present year are, at least, equal in variety and interest with those of the preceding. Some of them are of the same name and general character; but in such cases the article itself will be found to be either a more perfect specimen, different in some essential particular, or from some other locality. A minute description of each article will not be attempted. It will be proper, however, to introduce the most prominent among them with a brief explanation of their objects and uses. A portion of these articles were obtained of the Mohawks, Onondagas, Cayugas, Senecas and Tuscaroras, who, to the number of two thousand four hundred and fifty, now reside upon a large reserve secured to them by the British government, on Grand river, in the Niagara peninsula in Upper Canada. But the residue, and the chief portion, were obtained from the Sene-



cas in the western part of the State. They number in all two hundred and twenty, and the articles themselves are of one hundred and fifteen distinct species.

Gä-sweh-tä Ote-ko-ä,<sup>1</sup> OR BELT OF WAMPUM.

No. 3. Plate 1, figure 1.

Ote-ko-ä, OR STRING OF WAMPUM.

No. 4. Plate 2, figure 2.

The use of Wampum reaches back to a remote period upon this continent. It was an original Indian notion which prevailed among the Iroquois as early, at least, as the formation of the League. The primitive wampum of the Iroquois consisted of strings of a small fresh water spiral shell, called in the Seneca dialect *Ote ko-ä*, the name of which has been bestowed upon the modern wampum. When *Da-gä-no-we-dä*, the founder of the League, had perfected its organic provisions, he produced several strings of this ancient wampum of his own arranging, and taught them its use in recording the provisions of the compact by which the several nations were united into one people. At a subsequent day the wampum in present use was introduced among them by the Dutch, who in the manufactured shell bead offered an acceptable substitute for the less convenient one of the spiral shell. These beads, as shown in the plate, are purple and white, about a quarter of an inch in length, an eighth in diameter, and perforated lengthwise so as to be strung on sinew or bark thread. The white bead was manufactured from the great conch sea shell, and the purple from the muscle shell. They are woven into belts, or used in strings simply, in both of which conditions they are employed to record treaty stipulations, to convey messages, and to subserve many religious and social purposes. The word *wampum* is not of Iroquois origin. Baylie, in his History of New Plymouth, informs us that it was first known in New-England as *Wampumpeag*, from which its Algonquin derivation is to be inferred; and Hutchinson says that the art of making it was obtained from the Dutch about the year 1627.

1. NOTE.—The reader should note the characters by which the different sounds of the vowel *a*, the letter upon which the greatest variations are made, is indicated:—*ä* is sounded as in arm; *ä* as in at; *a* as in ale. All of the Indian words used are in the Seneca dialect of the Iroquois language.

In making a belt no particular pattern was followed: sometimes they are of the width of three fingers and three feet long, in other instances as wide as the hand, and over three feet in length; sometimes they are all of one color, in others variegated, and in still others woven with the figures of men to symbolize, by their attitudes, the objects or events they were designed to commemorate. The most common width was three fingers, or the width of seven beads, the length ranging from two to six feet. In belt making, which is a simple process, eight strands or cords of bark thread are first twisted, from filaments of slippery elm, of the requisite length and size; after which they are passed through a strip of deer skin to separate them at equal distances from each other in parallel lines. A piece of splint is then sprung in the form of a bow, to which each end of the several strings is secured, and by which all of them are held in tension, like warp threads in a weaving machine. Seven beads, these making the intended width of the belt, are then run upon a thread by means of a needle, and are passed under the cords at right angles, so as to bring one bead lengthwise between each cord, and the one next in position. The thread is then passed back again along the upper side of the cords and again through each of the beads; so that each bead is held firmly in its place by means of two threads, one passing under and one above the cords. This process is continued until the belt reaches its intended length, when the ends of the cords are tied, the end of the belt covered, and afterwards trimmed with ribbons. In ancient times both the cords and the thread were of sinew.

The belt possesses an additional interest from the fact, that the beads of which it is composed, formerly belonged to the celebrated Mohawk Chief, Joseph Brant *Tū-yen-dā-ná-ga*. They were purchased, by the writer, of his youngest daughter Catharine in October last, at the reservation on Grand river in Upper Canada before referred to; and were afterwards taken to Tonawanda in this State and made into the present belt. In this form it will be most convenient to preserve them as a relic of the distinguished war captain of the Mohawks.

Wampum was also put up in strings, from two to three and sometimes four feet in length, several of which were joined together into



one. The string represented in the plate was obtained of an Onondaga on Grand river.

Both in strings and belts, wampum was put to a great variety of uses. Its office was to record treaties, and preserve such transactions as were worthy of particular remembrance. Whatever was to be entrusted to its keeping was "talked into" the belt or string which ever afterwards could tell, by means of an interpreter, the exact transaction of which it was made at the time the sole evidence. Operating upon the principle of association, the belt or string gave fidelity to the memory. As the laws and usages of the League were entrusted to the guardianship of such belts and strings, one of the Onondaga sachems, *Ho-no-we-nă-to*, was made hereditary keeper of the Wampum, and he, and his successors, were required to be versed in its interpretation. These belts and strings were the only visible records of the Iroquois, and were of no use except by the aid of those special personages who could draw forth the secret records locked up in their remembrance.

White wampum was the Iroquois emblem of purity and of faith, It was hung around the neck of the White Dog before it was burned; it was used before the periodical religious festivals for the confession of sins, no confession being regarded as sincere unless recorded with white wampum; further than this, it was the customary offering in condonation of murder, although the purple was sometimes employed. Six strings was the value of a life, or the quantity sent in condonation, for the wampum was rather sent as the evidence of a regretful confession of the crime, with a petition for forgiveness, than as the actual price of blood.

Wampum has frequently been called the money of the Indian; but there is no sufficient reason for supposing that they ever made it an exclusive currency, or a currency in any sense, more than silver or other ornaments. All personal ornaments, and most other articles of personal property passed from hand to hand at a fixed value; but they appear to have had no common standard of value until they found it in our currency. If wampum had been their currency it would have had a settled value to which all other articles would have been referred. There is no doubt



that it came nearer to a currency than any other species of property among them, because its uses were so general, and its transit from hand to hand so easy, that every one could be said to need it. The ancient value of wampum was half a cent per bead, according to the statement of Catharine, the daughter of Brant. It is now very scarce and difficult to procure, as the manufacture of it ceased many years ago, and the quantity has been gradually diminishing with the lapse of time. It bids fair to rise again to its primitive value, at the period when it was exchanged for furs.

### Gä-däs-hă or SHEAF.

No. 1.



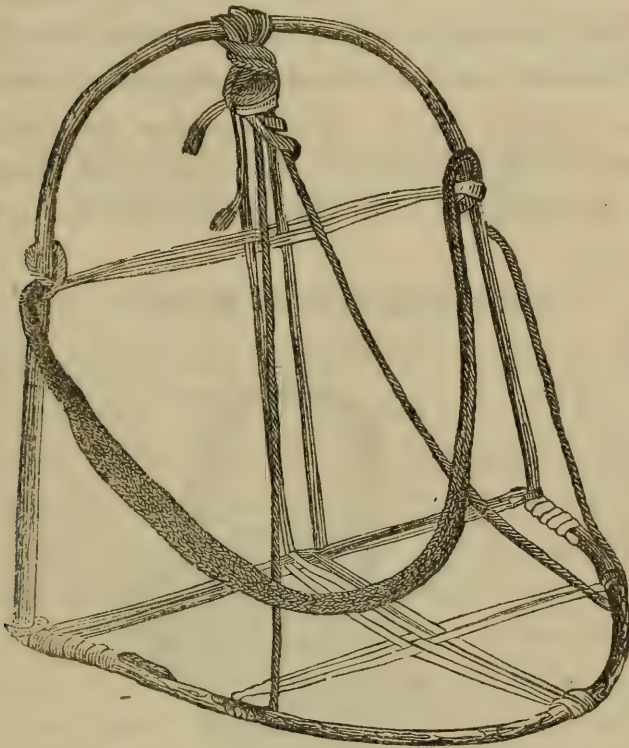
2 feet.

The sheaf is an Indian invention of great antiquity, and universal among Indian races. It was sometimes made of the skin of a small animal, like the wolf, which was taken off entire, dressed with the hair on, and hung upon the back, the arrows being placed within it. But the choicer articles were made of dressed unhaired deer skin, and embroidered with porcupine quills as represented in the figure. It was made of two strips of deer skin about two feet in length and of unequal width; one of these was narrow for the back side; the other about three times its width so as to make a convex front, thus forming a species of sac in which the arrows were deposited. The ordinary sheaf, as used by the Iroquois in ancient times, would hold from fifteen to twenty-five arrows; but those used by the western Indians were generally large enough for forty or fifty. It was worn on the back inclining from the left shoulder down towards the belt on the right side of the body, crossing the back diagonally. There are deer string fastenings at each end, the lower ones being attached to the waist belt, and the upper ones passing around the neck and under the left arm. To draw forth an arrow and place it in the bow, it was necessary to raise the right hand to the left shoulder when it came at once in contact with the feathered end, which projected from the sheaf; so that it was but the work of a sec-

ond to set an arrow in its place. Originally the Indian bow was about three feet in length, and the arrow two ; and it is said to have been an easy matter for an Iroquois hunter, with a bow of this description, to send an arrow, pointed with flint or horn, entirely through a deer. But in later days, when this weapon came to be used merely for amusement, and the muscular strength acquired, by its use, had abated, the bow was lengthened to four feet and the arrow to three.

Gä-ne-ko-wä-ah, BURDEN FRAME, OR LITTER.

No. 113.



This is an ancient contrivance to assist in carrying burdens. Game, cooking utensils, wood, bark, in fact everything which could be transported by hand could be borne upon this frame. They were a necessary appendage to every house, to the traveller, and to the hunter. Sometimes they were elaborately carved and finished, but more frequently were of a plain piece of hickory, like the one represented in the figure, and made with the quickest dispatch. The frame consists of two bows of Hickory, brought together at right angles, and fastened to each other by means of an eye and head. The upright part of the frame is the same as the horizontal in all particulars, except its greater length. Strips



from the inner rind of bass wood bark were then passed between the bows both length and crosswise, and fastened to the rim pieces. A burden strap was then attached to the frame at the point where the strip of bark passed across the upright bow from side to side; and from thence it passed diagonally across to the horizontal part of the frame, to the point where the lower strip of bark crossed that part of the frame. There were several feet of rope at each end, reserved to lash around whatever burden was placed upon the frame; but when the frame was empty, as it is shown above, these ropes were passed up to the top of the frame and there secured. After being loaded the frame was placed upon the back, and the burden strap passed over the head and placed across the chest. If the burden was very heavy it was customary to use two straps, one across the chest, and the other against the forehead. At the present day the burden frame is still in use.

Gă-ose-hă, OR BABY FRAME.

No. 19.



In the collection will be found two specimens, one of which was procured of a Tuscarora woman on Grand river, and the other of a Seneca at Tonawanda. This figure is introduced to show the frame divested of the belts and drapery by which, when in actual use, it is entirely concealed. It consists of but three principal pieces of wood, the bow, bottom board and foot board, upon the first and last of which the most labor was bestowed. They are



always carved, and frequently inlaid with silver, or with wood of different colors and in various figures. The bow, which arches over, is held to the bottom board by means of a cross piece, passing under it, into which the ends of the bow are inserted. It is further secured in its perpendicular position by means of side pieces in which the bow is embedded. The foot board at the small end of the frame is also carved, and often inlaid, it being the only part of it, which is exposed when the infant is lashed upon the frame. Deer strings are run along the outer edges of the bottom board under which the belts are passed from side to side passing over the body of the child. As a whole the *Gă-ose-hă*, with its embroidered belts, and other decorations, is one of the most conspicuous articles pertaining to their social life.

*Gă-swă-hose-hă*, OF BABY FRAME BELT: }  
*Gă-nose-gă*, OF BABY FRAME BELT. }

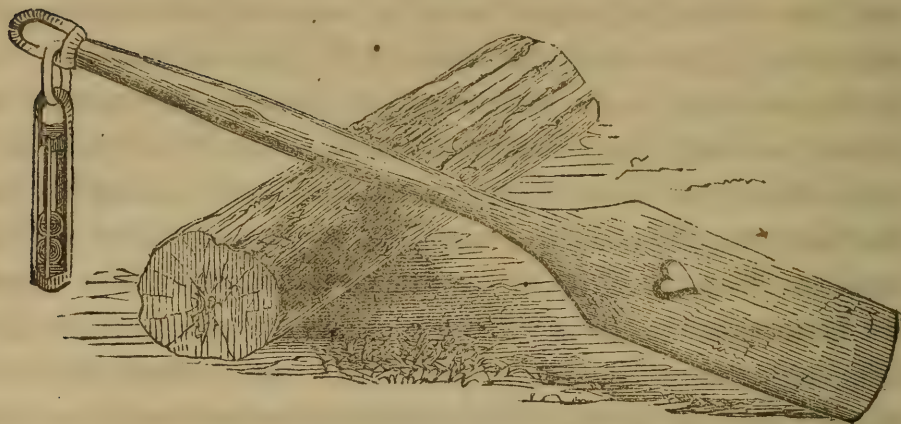
Plate 2.

*Gă-nose-gă*, OF BABY FRAME BELT.

The covering of the frame consists of a spread to draw over the bow, and these belts. The largest belt (*Gă swă-hose-hă*, Fig. 1,) is of red broad cloth, beautifully embroidered with bead work. This is attached to the frame next to the bow, and passed over the frame from side to side, under the deer strings and above the child, finally bringing that part of it, which is most embroidered in the centre of the frame. - In like manner the second belt, (*Gă-nose-gă*, Fig. 2,) which is made of broad cloth, is adjusted at the foot of the frame. Between the two the short belts (fig. 3,) is inserted. Over the bow is drawn the spread (*Yen-dus-ho-dă-quă*) usually of red merino, embroidered with beads, and often decorated with silver ornaments. Rattles were attached to the bow for the amusement of the child; but as its arms were confined beneath the belts, this gratification was only afforded when the frame was rocked by the Indian mother, or waved by the breeze while depending from the branch of a tree.

## Gät-go-ne-as-heh, or HOMMONY BLADE.

No. 36.



4 feet.

Many of the domestic utensils of the Iroquois were of wood. Figures of animals, of birds, and sometimes of reptiles were carved upon them in the most ingenious manner. The hommony blade or soup stick is one of this description; an article used in every Indian household for making hommony, succotash, or soup, and for many other purposes. It is usually from three to four feet in length, and made of hard maple, or other tough wood, in the general form of the one represented in the figure. This hommony blade is made out of one piece of wood, although the end piece is attached to the blade by a link. In the end piece are two wooden balls, also cut out of the solid wood within the frame in which they are confined. For a wooden utensil it is beautifully made.

No. 36.



This specimen is made in a different fashion, although much the same as the former. In the handle are two balls cut out, like the above, of the solid wood within the frame in which they are

seen, while the end of the utensil terminates in two human figures facing each other. Sometimes several links are cut out at the end of the handle, of which kind two specimens will be found in the collection. Those figured above are of Seneca manufacture.

Ya-ă-go-gen-tă-quă, or BREAD TURNER.

No. 33.



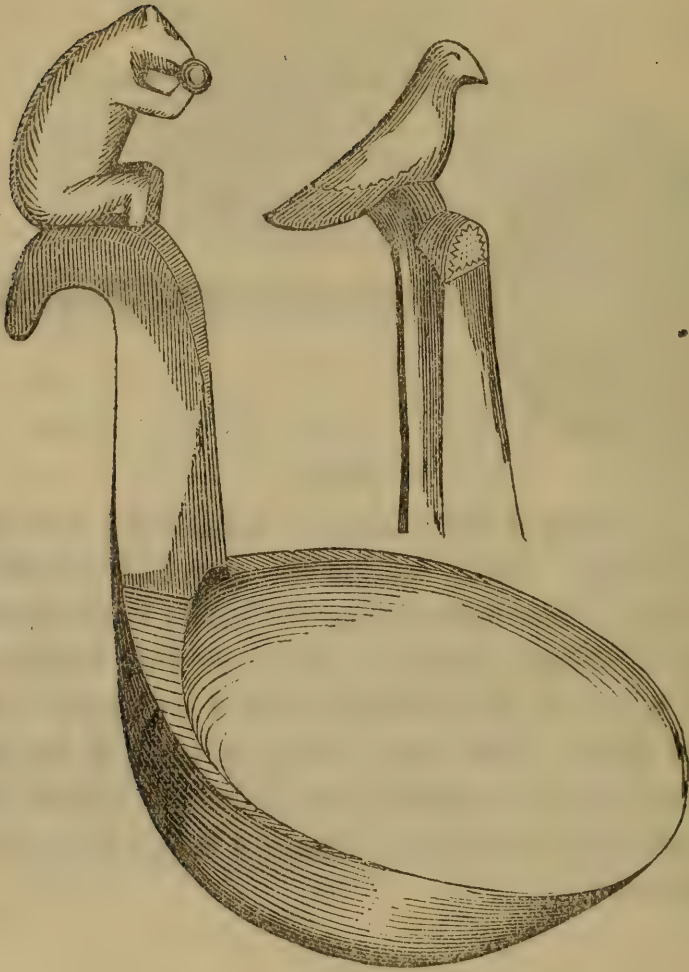
3½ feet.

The corn bread of the Indian is unleavened, and cooked by boiling in water. After hulling the corn and pounding it into flour, it is made into loaves about six inches in diameter and two in thickness. These loaves or cakes are then boiled until they are hard, which is the general mode of cooking; but they are sometimes baked. The bread turner is used, as its name indicates, to handle these loaves while under the process of cooking. The specimen given above was obtained from a Tuscarora woman on Grand river.



## Ah-do-gwä-seh, or LADLE.

No. 40.

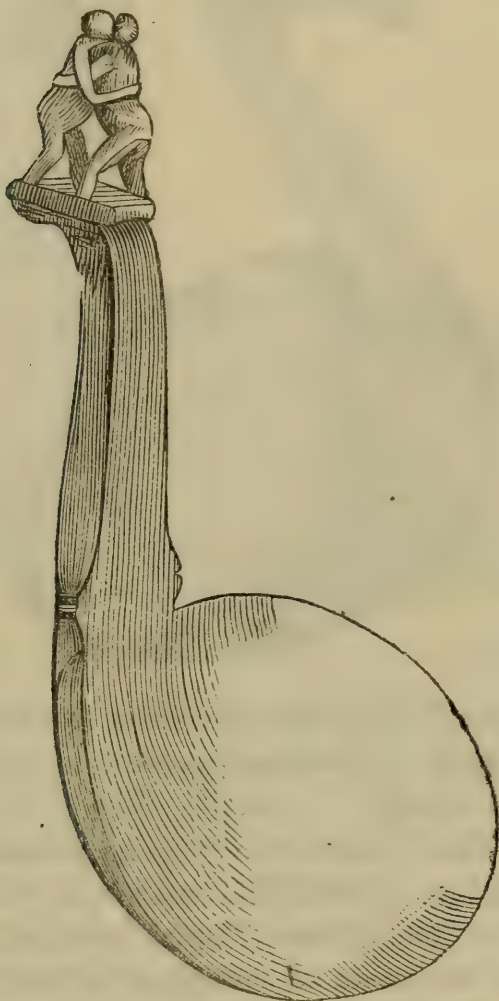


In ancient times the ladle not only answered as a substitute for the spoon among the Iroquois, but supplied the place of every other contrivance for taking food from the dish. They are made of hard wood, of different sizes and patterns, and very perfectly finished. The end of the handle is often surmounted with the figure of an animal or bird, so carved as to form a species of hook upon the back of the ladle with which to hang it upon the side

of the dish. These figures were often carved with surpassing skill, the proportions, and attitude of the animal being accurately preserved and studied. Of the two figured above, the one surmounted with a squirrel was made at Tonawanda by a Seneca ; and the other, with a hawk, upon Grand river, by a Cayuga. They are both finished specimens of the Indian ladle.

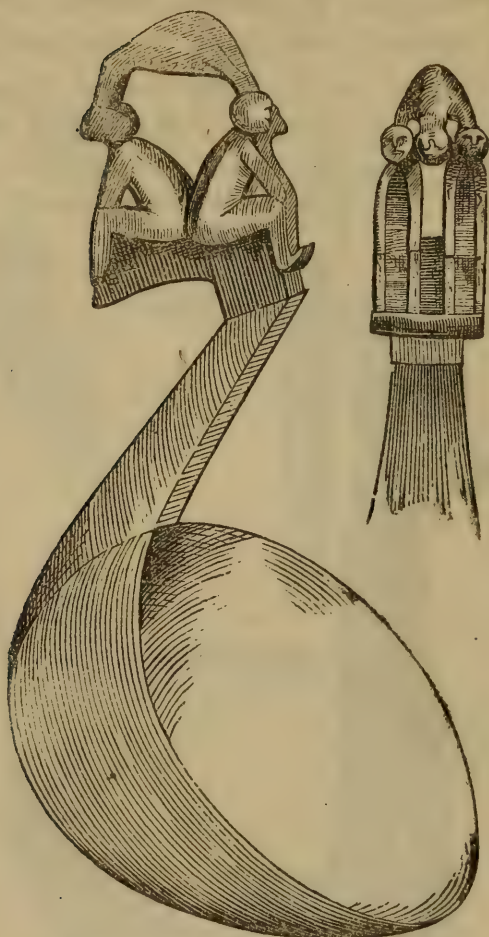
## LADLE, WITH WRESTLERS.

No. 39.



## LADLE WITH SITTING FIGURES.

No. 41.

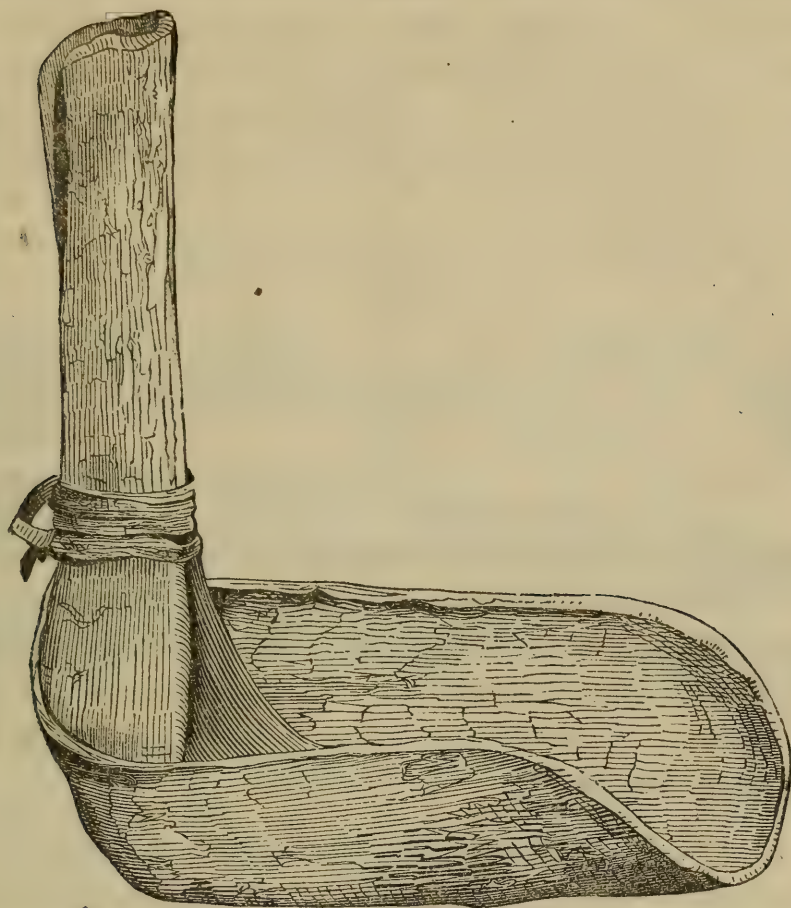


In other instances the human form was introduced in various attitudes. The figure of the wrestlers is quite spirited, and a good specimen of wood carving. Upon the others it will be seen there are five figures; four of them in a stooping posture, and the fifth bending over backwards, with his hands and feet each upon the head of one of the sitting figures. Other specimens are surmounted with a turtle, or a swan, or a wolf, at the fancy of the maker. These ladles are found in large numbers in every Indian family, at least one for every member of the household, in which to the present day they are the substitute for the spoon, and in most families, for the knife and fork. In minuteness, delicacy, and beauty of carving the ladle surpasses all the other wooden utensils of the Iroquois. In the collection will be found four specimens carved with human figures, seven with those of animals, and two plain; part of them were obtained among the Senecas, and the residue of the Iroquois in Canada.



## BARK LADLE.

No. 42.



The original ladle was of bark and a very simple contrivance, as will appear from the above representation. It was made of red elm bark, and would hold but little more than the common spoon. In ancient times ladles of this description only were used; but they were laid aside when the possession of metallic implements enabled them to substitute the present one of wood. The ladle is, without doubt, an original Indian utensil, and in all probability the origin of the common wooden ladle still in general use among our own people.

## O-să, or BASSWOOD BARK.

No. 88.

In the former report the subject of rope making from filaments of bark was adverted to, but not particularly explained. As fabrics of bark occupy a conspicuous place in their domestic economy, as well as form an interesting department of Indian manufacture, some further notice of the art will be made. The Iro-

quois used but two kinds of bark, the slippery elm and the basswood, the former for thread, twine, and burden straps; and the latter, which is a coarser bark, for ropes and heavy belts. At the proper season the inner rind of the bark was peeled off in narrow strips six or eight feet in length and tied up in bunches, as represented in the figure above, this being the first stage in the process of manufacture.

O-să, or SKEIN OF BASSWOOD FILAMENTS.

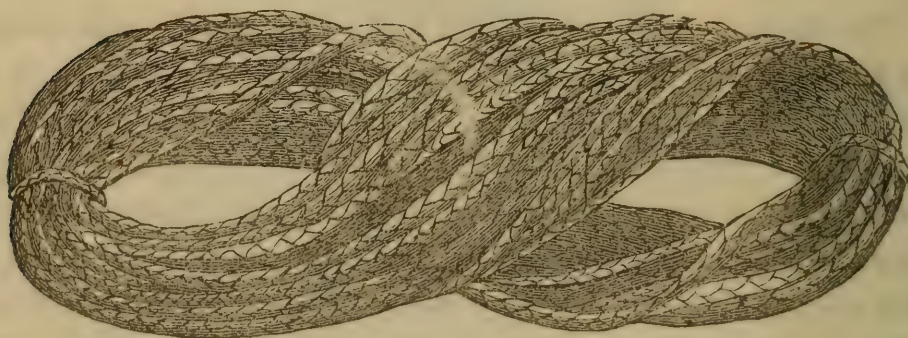
No. 87.



Before it would run off into filaments or small threads, it was boiled in ashes and water, washed thoroughly, and dried in the sun. It could then be separated into natural threads or filaments of any size, which, unless too fine, would run the length of the strips of bark. It was then put up in skeins, as shown in the figure, ready for use.

Gä-a-sken-dä, or BARK ROPE.

No. 81.



Basswood filaments were usually run off coarse, and, in that condition, braided into ropes, as represented above. Three strands only were used, and in the process of braiding, which was done by hand, these strands were not twisted, as their strength would not thereby be increased. A specimen of this bark rope fifty feet in length is furnished, and two others about thirty feet each. In some instances burden straps of a coarser kind were made of basswood, which was braided into an open



work belt, with interstices between the strands. Upon the burden frame mentioned above is a strap of this description.

The inner rind of the slippery elm bark is peeled off, in the first instance, in narrow strips about four feet in length, and tied up in bundles. It is sometimes preserved for months in this form before it is made into threads. After being boiled in ashes and water, and washed and dried in the same manner as basswood bark, it is run off into filaments, which can be made as fine as small thread, if desired.

Ose-gă, or SKEIN OF SLIPPERY ELM FILAMENTS.

No. 63.



These threads are then tied up in skeins, as represented above, and laid aside for use. For burden straps of the best quality, this thread alone is used, it being stronger, more pliable, and of a finer texture than the basswood. The skeins themselves have a reddish tinge usually, but the first quality has a grayish color. They are sometimes dyed black or some fancy color, to give variety to the belts into which they are woven. A specimen of the gray and of the colored bark thread is also furnished.

In the manufacture of the several species of burden strap, more skill, ingenuity and patient industry are exhibited, perhaps, than in any other single article fabricated by the Iroquois. The strap consists of a belt in the centre about two feet in length by two and a half inches in width, with ropes at each end about seven feet each; thus making its entire length from fifteen to twenty feet. It is used attached to the litter or burden frame, to the baby frame, and to the basket, when these burdens are to be borne on the back; in which cases the belt is passed around the forehead. Fifteen or twenty small cords are first made, about three feet in length, by twisting the filaments of bark by hand. These cords, which make the warp, or substance of the belt, are



then placed parallel with each other, and side by side; after which finer threads of the same material, usually colored, are prepared for the filling, to be passed across the cords over and under each alternately from side to side and back again. The fine thread, or filling, is twisted in the first instance, and also again as it is braided or woven in with the warp while being passed across from side to side. As the work is all done by hand, it is a slow and laborious process, but the specimen will show how successfully it is accomplished. After the filling has thus been braided in with the warp, each of the main cords, although covered on both sides, literally wound with the finer threads in crossing and returning, is still distinctly visible, giving to the belt the appearance of being ribbed. The whole process is exactly the same as the modern process of weaving, the main difference consisting in this, that in the latter the warp and filling are nearly equal in the size of the threads, while in the Indian art the warp is several times larger than the filling.

Towards the ends the belt is narrowed gradually by joining two of the cords in one, until its width is diminished about one-third. The cords are then lengthened out by adding new filaments, and braided into an open-work band or bark rope about an inch wide, and flat; the band consisting of as many strands as there were cords at the end of the belt. The surface of these belts is generally smooth and even, and the belt itself so closely braided as to leave no interstices through which the eye could penetrate. When threads of different colors were used, the belt was variegated simply, or small figures were woven in it for ornament.

Another species of burden strap, of more expeditious manufacture, was made by placing the warp cords side by side, and stitching them through and through with bark thread, in which case the cords themselves were made larger than in the ordinary burden strap. For stitching, a hickory or bone needle, without an eye, was used in ancient times. As the cords consisted of two strong threads twisted into one, the stitching thread was passed through each cord, between its two parts, from one side to the

other and back again. Ropes were then attached to the ends of the belt and the work was completed.

O-ä-ta-ose-kä, OF MOOSE HAIR BURDEN STRAP, }  
 Gus-hä-ah, OF DEER HAIR do }

No. 74 Plate 3.

Near the rump of the Moose (*Yen-dä-ne*), and near the neck between the shoulders, there are small tufts of white hair, about four inches in length, each yielding a small handful. These hairs were carefully preserved, dyed red, blue and yellow, and used in the manufacture of the finest varieties of burden straps. Similar tufts of hair, but inferior in quality, are found upon the Elk, (*Jorä-dä*), and in the tail of the deer (*Na-o-geh*.) The Moose hair burden strap is made in all respects as above described, except that the thread, which serves as the filling, is wound with this hair upon one side of the belt, in such a way, as either to cover the whole face of the belt, or to sprinkle it through with small figures at the pleasure of the maker. The one represented in the plate (fig. 1.) is a very perfect and beautiful piece of work, nearly the whole upper surface of the belt being covered with Moose hair, white, yellow, red and blue, which is woven into the belt in a regular figure. It was made by an Onondaga woman on Grand river in Upper Canada, where it was purchased in October last. Although it has been used many years, and the colors have lost some portion of their original brilliancy, it is yet wholly unimpaired, and a remarkable specimen of finger weaving, as well as of artizan skill. It is not only woven compactly, but with such evenness of thread as to present a smooth surface and uniform texture. It is difficult to believe, upon an examination of the under side of the belt, that it is manufactured with bark threads; and perhaps still more incredible, that in the mechanism of this belt, can be found the primary elements of the art of weaving.

In figure 2 of the plate is a representation of a burden strap in which deer's hair is used. It is made in the same general fashion as the preceding, and is the work of a Seneca woman at Tonawanda.

1. Among the Chippeways a great variety of fancy work in the nature of baskets, &c., is made of birch bark, upon which various figures are worked with moose hair of the kind above described.



## Da-gä-yä-sont, or SILVER CROSS.

No. 6. Plate 4.

The passion of the Iroquois for silver ornaments in ancient times was very extravagant; and down to the present day it has suffered but little abatement. This inclination was seized upon by the trader, who purchased the richest furs with articles of this description of small comparative value. Among the number is found the silver cross, which doubtless owed its introduction among them, in the first instance, to the pious ministrations of the Jesuits; but at the present day it is regarded merely as a personal ornament, and is without significance to them as a religious emblem. When worn they were attached to a necklace, or perhaps fastened to the hat, or hung upon the hair. The one figured in the plate is of unusual dimensions, the longest part being about ten inches, and the transverse about six, and made of solid silver. It was purchased of a Cayuga on Grand river. They are frequently found with two transverse pieces of silver, as shown in the two small crosses, figures 2 and 3. Sometimes they are engraved with figures of animals or birds, as a swan. The name "Montreal" is stamped upon two out of the three other crosses in the collection, thus indicating the place of manufacture.

## An-ne-as-gä, or SILVER BROACH.

No. 9. Plate 5.

## Ah-was-hä, or EAR RING.

No. 15. Plate 5.

## Au-ne-ä-hus-hä, or FINGER RING.

No. 14. Plate 5.

Broaches of silver are worn by every female. They are of all sizes and patterns, from six inches in diameter, and worth as many dollars, to half an inch and worth a half dime; answering upon the female dress the double purpose of ornament and use. At a fixed value they pass from hand to hand, thus forming a species of currency among them. Every Indian female, however humble, has some silver broaches, while occasionally those can be found who count them by hundreds. The larger ones are usually worn upon the *Ah-de-a-dä-we-sä*, or over dress, in front, as a button or pin, the largest being placed at the bottom. Some-



times the smaller ones are strung together and worn as a hat band, or as a necklace.

Finger and ear rings of the same material, specimens of which may be seen in the plate, were also very common. The most of these silver ornaments in later years have been made by Indian silversmiths, one of whom may be found in nearly every Indian village. They are either made of brass, of silver, or from silver coins pounded out, and then cut into patterns with metallic instruments. The ear rings figured in the plate were made out of bar silver, by an Onondaga silversmith on Grand river, under the direction of the writer.

Ont-wis-tä-ne-un-dä-qua, OR SILVER BEADS.

No. 17. Plate 6.

The long silver beads, represented in the plate, were very common in former times, but are now rarely to be met with. They are simply tubes of silver, varying from one to two inches in length, and strung upon deer string, with round silver beads between them part of the way from the lower end of the string. In this string there are seven strands, all of which are banded together by the deer strings which issue from the small ends of the several strings; but at the larger ends, they are disunited. It was purchased of the wife of a distinguished Cayuga sachem, John Jacobs, (*Jcte-ho-weh-ko*) on Grand river. Beads of this description are worn around the neck, or in the hair, or perhaps as a hat band, to which use they were devoted at the time of their purchase. They bear evidence of long usage.

O-wis-tä-no-o, OR ROUND SILVER BEADS.

No 18. Plate 7. Fig. 2.

Gä-te-as-hä, OR GLASS BEADS.

No. 47. Plate 7. Fig. 1.

The round silver beads figured in the plate, which were obtained of a Seneca female at Tonawanda, were evidently made in imitation of the old fashioned gold beads, as there is a close resemblance in size and workmanship. At an early day these beads were in great favor with the Indian female, but now they

are seldom to be met with. Every fifth bead upon the string is of an opaque blue glass, introduced for contrast.

The common glass beads (fig. 1) have always been and still continue to be in high favor. From the period of their discovery to the present time, glass trinkets of this description have continued to dazzle the eye of the Indian maiden, and to be seized upon with the greatest avidity. The brilliancy of their colors, the neatness of their finish, and their conspicuous appearance as personal ornaments, have ever given to necklaces of this description a peculiar charm; a charm sufficiently potent to draw forth the richest furs from the depths of the wilderness, to be freely exchanged, although a thousand fold more valuable, for these glittering baubles. The specimen figured in the plate was procured of a Mohawk girl in Canada.

Gä-te-üs-hä Gä-a-o-tä-ges, or GRASS SHOULDER ORNAMENT.

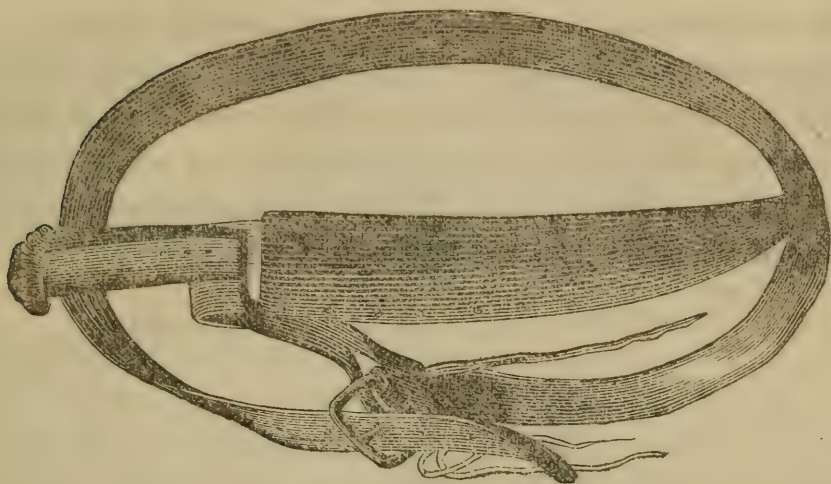
No. 73. Plate 8.

This article of dress is in the nature of a necklace. It is made of a fragrant marsh grass called by the Senecas Gä-a-ó-tä-ges, which is first braided into small three strand cords, after which several of them are united in one chain. At intervals of three or four inches small discs, made of the same material, but sometimes covered upon the upper face with bead work, are attached, together with some other ornaments. On the specimen represented may be seen a small and delicately made basket of the size of a thimble, made of the same grass. This is more particularly a female ornament, although in ancient times it appears to have been worn by both sexes. The grass of which it is made constantly emits an agreeable odor, the fragrance of which made a species of substitute for artificial perfumery. It was obtained of an Oneida female on Grand river



## Gä-gä-ne-as-heh, OR KNIFE AND BELT.

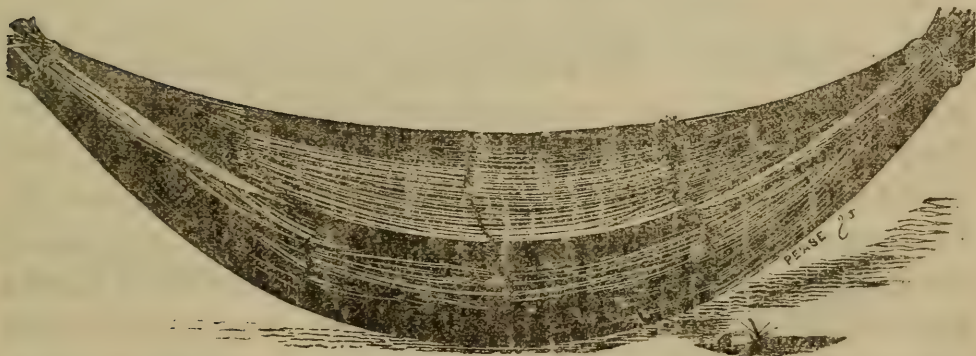
No. 54.



Among the Senecas in this State, and the Iroquois in Canada, the knife and belt are very frequently to be seen as a part of their daily apparel. To the leather belt a plain sheath is attached, in which the knife is worn, the handle appearing partly above it. Formerly the tomahawk was worn in the belt, and behind the back, from which circumstance doubtless originated the habit of wearing the knife in the same manner; for it is as frequently seen behind the back as upon the side. The blade, which is usually from six to ten inches in length, is that of a common knife; and it is used as a substitute for the pocket knife, as well as for a great variety of purposes. The one figured above was procured of a Seneca on Grand river.

## Yun-des-ho-yon-dä-gwat-hä, OR POP CORN SEIVE.

No. 93.



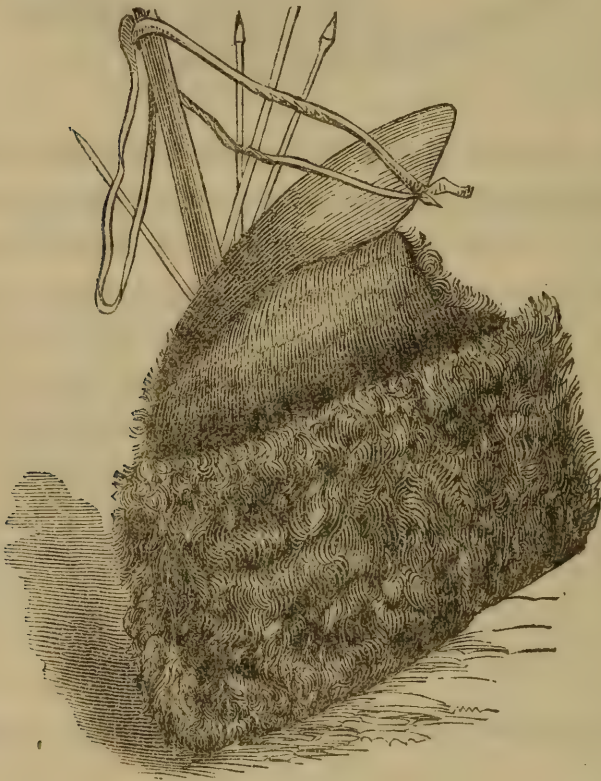
Corn was charred by roasting it before a long fire in the field while in its green state. Before reducing it to charred corn flour



it was parched over in the ashes to reduce its weight still more by drying. The splint seive represented in the figure was used to sift out the fine ashes which might adhere to the kernel. After the corn was thus purified it was pounded into flour and mixed with a portion of maple sugar; in which condition it not only made a very palatable and nutritious food, but was so light that sufficient could be carried in the bear or deer skin pocket of the hunter or warrior for many days subsistence.

Gis-tät-he-o Gä-yä-ah, OR FAWN SKIN BAG.

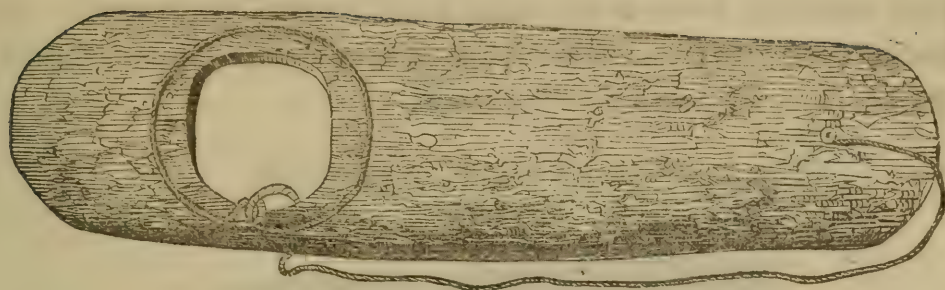
No. 62.



Bags or pockets of this description, made of the skins of animals, were in constant use among the Iroquois in ancient times. They were hung to the girdle of the warrior and the hunter, and would contain within their narrow folds sufficient subsistence for a long expedition, thus answering very perfectly the purposes of the knapsack. At home they were used as repositories for the safe keeping of choice articles. Occasionally these pockets were made of the skin of the speckled fawn, a fine specimen of which is given on plate 7.

## BIRD TRAP.

No. 891-2.



Trapping game of all kinds, from the bear and deer to the quail and snipe, was a common practice. For deer, a young tree was bent over and held in this position by the mechanism of the trap. When sprung a noose was fastened around the hind leg of the deer, and he was drawn up in the air by the unsprung tree. Bear traps were constructed in such a way as to let down a heavy timber upon the back of the animal, when sprung, and thus pin him to the earth. Nets of bark twine were also spread for pigeons and quails. An attempt was made to procure models of these traps, but the project failed for the present year. A simple bird trap, however, for small birds, will be found in the collection. It consists of a rounding strip of elm bark about eight inches long by four wide, with an eye cut in one end and a piece of bark twine with a noose at the end of it, attached to the other. After the bark is secured upon the ground, a few kernels of corn are dropped through the eye upon the ground, and the noose adjusted around it. When a bird attempts to pick up the corn the ruffled plumage of the neck takes up the string, and brings the noose around the neck, which is tightened the moment the bird attempts to fly, and either strangles or holds it in captivity. The trap is said to be very successful.

## Gä-wă. OR MOCCASIN AWL.

No. 59.



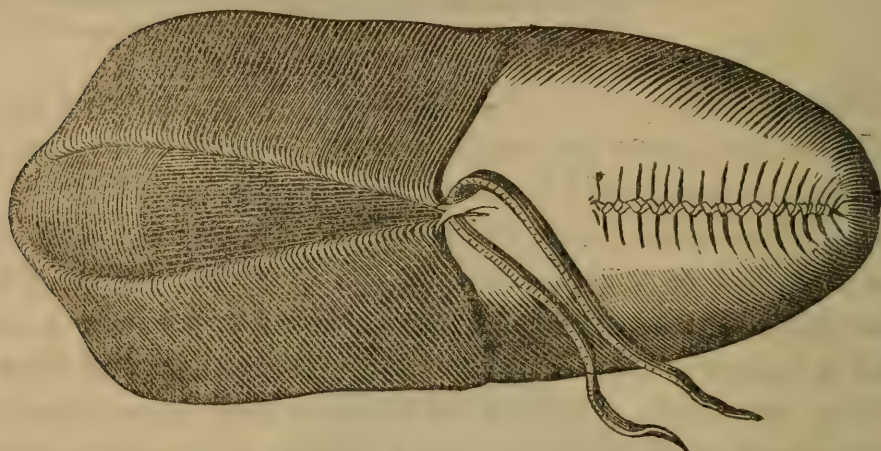
In ancient times the moccasin awl was a small bone about five inches in length taken near the ankle joint of the deer. But in



later days they have substituted a metallic point, inserting it however in a bone handle. These handles are often carved with such care and labor as to make them tasteful implements. In sewing deer skin either with sinew, or deer strings, or bark thread, the Iroquois women are very expert.

Ah-tä-quä-o-weh, or MOCCASIN.

No. 33.



In the common moccasin the side pieces instead of folding down rise above the ankle, and are secured with strings. Many of the Iroquois both male and female, and especially the elders, still cling to the moccasin as the most acceptable protection for the foot; and wear it plain, as represented in the figure, as a part of their daily apparel. The bottom and sides are without seams, the only ones being on the instep in front, and up the heel behind. In the figure the moccasin is thrown out of shape by being flattened on the side. When in actual use the thickness of the moccasin would be the thickness of the foot. Two specimens of the plain moccasin are furnished, one from Canada and the other from Tonawanda.



## Gus-to-weh, or HEAD DRESS.

No. 53.



This figure is introduced to show the skeleton or frame of the Iroquois head dress, which, when completed, is the most striking feature of their costume. It is made of splint in the manner represented, except that in some instances another band arches over from side to side. The large feather revolves in the tube in which it is inserted. It was obtained of a Seneca on Grand river.

## Gä-kä-ah, or KILT.

No. 27. Plate 9.

The ancient male costume of the Iroquois consisted, in its principal parts, of the moccasin made plain; deer skin leggins made plain, setting tight to the legs, and rising considerably above the knees; the Gä-kä, or breech cloth also of deer skin, worn about the loins; and a bear or deer skin blanket. This is especially the present daily costume of the wild tribes, which roam over the plains in and beyond the Indian territory, and west of the Mississippi States; and was, doubtless, the primitive costume of the whole Indian family. The first innovation among the Iroquois was the introduction of cotton shirts, after their intercourse commenced with the Dutch and English. With the use of the

shirt the *Gä-kä* was laid aside ; and soon afterwards blankets of skin gave place to those of woolen, which were supplied by the traders. At a later period the pantaloons were substituted for the leggin, and the woolen blanket was made into a frock coat. The ancient Iroquois male costume is now retained only as an apparel for the dance. The kilt is of modern introduction among them, and never was used except in the dance. At an early day, when the *Gä-kä* was in universal use, the kilt was not even worn for this purpose. It is difficult to determine from whom it came, but it has become the favorite part of their dancing costume. The kilt shown in the plate, is a superb specimen made of white buckskin embroidered with bead work. It is secured around the waist by a belt, and falls down to the knees. The plate itself will supersede the necessity of any description ; making it only necessary to add, that this article is of Seneca manufacture.

Got-ko-on-dä Gise-hä, OR DEER SKIN LEGGIN.

No. 23. Plate 10.

This leggin is a pure Indian article made after the antique fashion. It is made of brown colored deer skin tanned in the Indian manner, designed to set tight to the skin, and to rise above the knee. Upon the projecting edge, which is worn in front, a porcupine quill border is worked in the ancient style. This leggin is a reproduction of that worn before the kilt came into use, when the leggin rose higher than at present.

Ah-tä-quä-o-weh, OR MOCCASIN.

No. 31. Plate 11.

O-ha-dä, OR PORCUPINE QUILL.

No. 109. Plate 14. No. 1.

Both the male and female moccasin were introduced in the last report ; but they were chiefly embroidered with bead work. The moccasin represented in the plate is such a beautiful specimen of porcupine quill work, that it will justify an equal illustration. The porcupine (*Gä-ha-dä*) is covered with a species of quill perfectly round, without down or feather, and terminating in a sharp point. The small quills are from one to four inches in length, and are white with the exception of the tip ends or about one fifth of the quills, which are of a dark brown color, and give to the ani-



mal its dark appearance. After being picked and seasoned they are colored red, blue and yellow by artificial dyes, (see fig. 24, plate 12,) and then used in connection with the white ones. For heavy border work the quills are moistened and flattened down, and in that form are used, as will be seen in the plate; but for vine or figure work, a thread is stitched through the deer skin and around the quill, and drawn down so as to compress it. This process is repeated at intervals, the quill being bent between the stitches. No patterns are used to work from, the eye and the taste being the principal guides. In combining colors much taste is displayed.

Yunt-ka-to-dā-tā, OR DEER SKIN SHOULDER BELT.

No. 30. Plate 12.

Da-yunt-wā-hos-tā, OR DEER SKIN WAIST BELT.

No. 29. Plate 13.

Whether the practice of wearing a belt over the left shoulder was a primitive custom of the Iroquois, or an imitation of the corresponding article in our own military costume is uncertain; but the latter seems to be probable. At an early day these belts were worn, made of deer skin worked with porcupine quills like the one represented in the plate. Having been passed over the left shoulder and across the chest diagonally to the waist belt on the right side it was there secured. The waist belt was a narrow strip of deer skin embroidered in the same manner. It was put on like the bead and worsted belt, with the centre in front, the belt being passed around the body from before back, and the ends brought around in front again to be tied, in order that the ornamented part might occupy a conspicuous place.



## Gā-go-sā, OR FALSE FACE.

No. 73.



The tendency of the Iroquois to superstitious beliefs is especially exemplified in their notion of the existence of a race of supernatural beings whom they call Falsefaces. This belief has prevailed among them from the most remote period, and still continues its hold upon the Indian mind. The Falsefaces are believed to be evil spirits or demons without bodies, arms or limbs, simply faces, and those, of the most hideous description. It is pretended that when seen they are usually in the most retired places, darting from point to point, and perhaps from tree to tree, by some mysterious power; and possessed of a look so frightful and demoniacal as to paralyze all who behold them. They are supposed also to have power to send plagues and pestilence among men, as well as to devour their bodies when found, for which reasons they were held in the highest terror. To this day there are large numbers of the Iroquois who believe implicitly in the personal existence of these demons.

Upon this belief was founded a regular secret organization called the Falseface band, members of which can now be found in every Iroquois village both in this State and Canada, where the old modes of life are still preserved. This society has a species of initiation, and regular forms, ceremonies and dances. In acquiring or relinquishing a membership their superstitious notions were still further illustrated, for it depended entirely upon the omen of a dream. If any one dreamed he was a Falseface, it was only necessary to signify his dream to the proper person, and give a feast, to be at once initiated; and so any one dreaming that he had ceased to be a False face, had but to make known his dream and give a similar entertainment to effect his exodus. In no other way could a membership be acquired or surrendered. Upon all occasions on which the members appeared in character they wore False-faces of the kind represented in the figure, the masks being diversified in color, style and configuration, but all agreeing in their equally hideous appearance. The members were all males save one, who was a female, and the Mistress of the Band. She was called *Gā-go-sā Ho-nun-nas-tase-tā*, or the keeper of the Falsefaces; and not only had charge of the regalia of the band, but was the only organ of communication with the members, for their names continued unknown.

The prime motive in the establishment of this organization was to propitiate those demons called Falsefaces, and among other good results to arrest pestilence and disease. In course of time the band itself was believed to have a species of control over diseases, and over the healing art; and they are often invoked for the cure of simple diseases, and to drive away, or exorcise the plague, if it had actually broken out in their midst. As recently as the summer of 1849, when the cholera prevailed through the State, the Falsefaces, in appropriate costume, went from house to house at Tonawanda, through the old school portion of the village, and performed the usual ceremonies prescribed for the expulsion of the pestilence.

When any one was sick with a complaint within the range of their healing powers, and dreamed that he saw a Falseface, this was interpreted to signify that through their instrumentality he

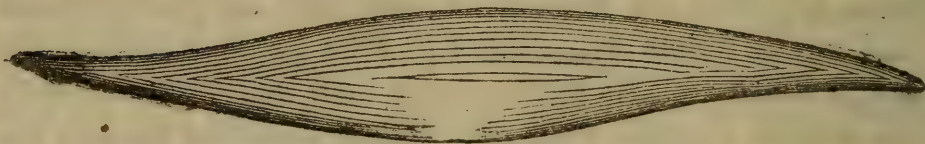


was to be cured. Having informed the mistress of the band, and prepared the customary feast, the Falsefaces at once appeared, preceded by their female leader, and marching in Indian file. Each one wore a mask or falseface, a tattered blanket over his shoulders, and carried a turtle shell rattle in his hand. On entering the house of the invalid they first stirred the ashes upon the hearth, and then sprinkled the patient over with hot ashes until his head and hair were covered; after which they performed some manipulations over him in turn, and finally lead him around with them in the falseface dance (*Gā-go-sā*), with which their ceremonies concluded. When these performances were over, the entertainment prepared for the occasion was distributed to the band, and by them carried away for their private feasting, as they never unmasked themselves before the people. Among the simple complaints which the Falsefaces could cure infallibly, were nose bleed, toothache, swellings, and inflammation of the eyes. The falseface shown in the figure was purchased of an Onondaga on Grand river; the other one in the collection came from Tonawanda.

Da-ya-no-tā-yen-dā-quā, or SNOW BOAT.

No. 111.

Top view.



Bottom view.

With the snow boat was played one of the winter games of the Iroquois, in which the strife was to discover which boat would run the farthest in an iced trench or path. The boat was about fifteen inches in length, and made of beech, or other hard wood, something in the fashion of a canoe. It was solid, with the exception of an oblong cavity in the centre, over which arched a hickory bow, designed to suspend bells or other rattles upon.



In the stern of this little vessel a white feather was inserted for a flag, by which to follow it in its descent. On the bottom the boat was rounded, but with a slight wind lengthwise, as shown in the figure, to give it a true direction.

A side hill with an open plain below was the kind of place selected to try the speed of the boats. Trenches in a straight line down the hill, and about a foot wide, were made by treading down the snow; after which water was poured into them that it might freeze and line the trenches throughout their whole extent with ice. These trenches to the number of a dozen, side by side, if as many individuals intended to play, were finished with the greatest care and exactness, not only down the hill side, but to a considerable distance across the plain below. At the same time the boats themselves were dipped in water that they might also be coated with ice.

The people divided by tribes in playing this, as in all other Iroquois games; the Wolf, Bear, Beaver and Turtle tribes playing against the Deer, Snipe, Heron and Hawk. At the time appointed the people assembled at the base of the hill and divided off by tribes, and then commenced betting upon the result, a custom universally practised on such occasions. The game was played by select players who were stationed at the top of the hill, each with two or three boats, and standing at the head of his own trench. When all was in readiness the boats were started off together at the appointed moment, and their rapid descent was watched with eager interest by the people below. It is not necessary to describe the scene. If the game was twenty it would be continued until one side had made that number of points. A count of one was made for every boat which led all upon the adverse side, so that if there were six players on a side it was possible for that number to be made at one trial. On the contrary, if all the boats but one upon one side were in advance of all on the adverse side but one, and the latter was in advance of all, this head boat would win and count one. The principles of the game are precisely the same as in the Snow Snake game described in the last report. All of these Indian games were played with great zeal and enthusiasm. To us they appear to be puerile

amusements for men in the prime of manhood; but yet they were adapted to the ways and habits of a people living without arts, and without the intellectual employments which pertain to civilized life. Such games mark the infancy of the human mind, but they often beget a generous emulation and a ready skill which lead to future improvement and elevation.

Gā-no-sā, OR CONCH SHELL BREAST PLATE.

No. 43. Plate 14. Fig. 2.

Breast plates of this description were much worn in ancient times. The leading chiefs of the Iroquois wore medals either of silver or sea shell on public occasions. This medal is in the common form, and is chiefly interesting as the personal ornament of Peter Fish Carrier, (So-ace) a Cayuga Chief about 60 years of age, now residing on Grand river. He is the only surviving son of the distinguished Cayuga chief (*Ho-jā-ga-ta*), who bore the name of Fish Carrier, and who resided at Cannoga on the Cayuga lake during the period of the revolution. A reservation was set apart for his special benefit at this place, by the treaty of 1795, made at the Cayuga bridge. He died near Buffalo about the year 1800, after which his family removed to Grand river.

Ah-dā-dis-hā, OR CANE.

No. 49.



This cane is also chiefly interesting as a memento of the most distinguished living sachem of the Cayugas, John Jacobs, (*Jote-ho-weh-ko*), now about eighty years of age, and residing upon Grand river. He was born about the year 1770, at the chief village of the Cayugas *Gā-yā-gā-an-ha*, which was situated upon the north side of Utts creek, about one and a half miles from the Cayuga lake, and about four miles north east from Aurora. When General Sullivan was on his return from the invasion of the Seneca territory in 1779, he sent a detachment into Cayuga county to destroy the villages of the Cayugas. The people fled to Niagara, and *Jote-ho-weh-ko*, then a small lad, was carried by his family. At a subsequent day he returned to his former home and resided



there until the Cayugas finally disposed of all their lands to the State and emigrated. His family removed to Grand river where at a subsequent day he was made one of the ten Cayuga sachems, as his name indicates. The cane itself is curious as a specimen of Indian carving, it being wreathed with serpents. It has been used by *Jote-ho-weh-ko* for many years, and was obtained of him for the collection in October last on Grand river.

Ah-so-quā-tā, OR PIPE.

No. 50.

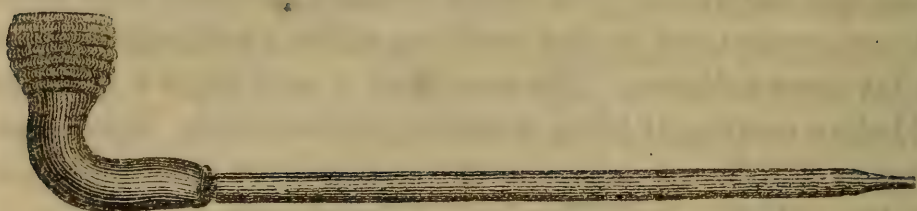


The pipe represented in the figure is made of a soft red stone, called Catlinite, or the Missouri pipe stone, that State being the chief, if not the only place, in which it is found. It is in common use among the western Indians for making the calumet, and also for common pipes. Like soap stone, which was much used by the Iroquois for the same purpose, it can be fashioned into pipes without the aid of metallic instruments. There is a tradition in relation to this pipe that it was taken from a Sioux many years ago by a Seneca, in one of the many inroads of the Senecas into the territories of the former people. It bears decisive marks of its antiquity, and also of severe usage, for the original orifice in which the stone piece was inserted has been taken away, and a new one made above in which the present stone is fastened. It was obtained of a Seneca.



## Ah-so-quā-tā, OR PIPE.

No. 50



This pipe is made of stone ; but without the stem piece it is in the exact fashion of the ancient earthen pipe of the Iroquois. As the stone is intensely hard it is difficult to say how it was drilled out. Stone implements are often found of Indian manufacture, some of which are bored with great regularity. It has been supposed that the boring was done by means of a reed made to revolve back and forth by hand, and sand employed to do the cutting. Nothing is known of the origin or manufacture of this pipe ; it was purchased of a Mohawk on Grand river.

## STONE PIPE MADE OF NODULE.

No. 52.



4 feet

Among the western Indians large pipe bowls with long stems, ornamented in various ways, and called calumets, are very common ; but among the Iroquois the pipe was usually short, and without a stem piece. Fancy pipes are occasionally to be met with, like the one represented in the figure, having a long stem piece and a huge bowl. In this case the bowl is a nodule of stone, with a rough exterior, weighing about a pound ; and has been drilled out by artificial means. The handle is of wood colored black and perforated by means of wire. A cluster of feathers depends from the centre of the handle. It was procured from a Seneca at Tonawanda.

## Gā-re-gwǎ, or SPEAR.

No. 64.

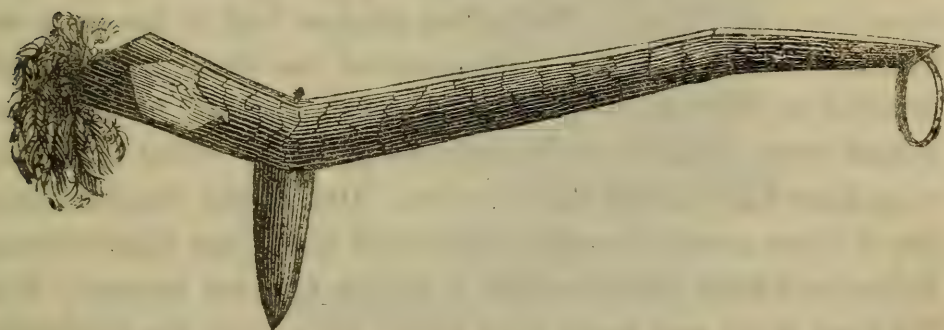


5 feet.

The spear is not an Iroquois weapon ; although in later years articles of this description of American manufacture have sometimes been found among them. They had no name in their language for spear, until it became necessary to give one to the foreign weapon. The one figured above was purchased of an Onondaga on Grand river, and is said to have been used in the last war between the United States and Great Britain.

## Gä-ne-a-ga-o-dus-ha, or WAR CLUB.

No. 65.



The deer horn war club was one of the ancient weapons of the Iroquois at the period of their discovery. In some instances in later times a steel blade was substituted for the deer horn, as in the above specimen, thus rendering it a more deadly weapon than formerly.

## Gä-snä Gä-o-wo, or BARK CANOE.

Plate 15.

In the construction of the bark canoe, the Iroquois exercised considerable taste and skill. The art appears to have been common to all the Indian races within the limits of the republic, and the mode of construction much the same. Birch bark was the best material ; but as this birch did not grow within the home territories of the Iroquois, they generally used the red elm and bitternut hickory. The canoe figured in the plate is made of the



bark of the red elm, and consists of but one piece. Having taken off a bark of the requisite length and width, and removed the rough outside, it was shaped in the canoe form. Rim pieces of white ash, or other elastic wood, of the width of the hand, were then run around the edge outside and in, and stitched through and through with the bark itself. In stitching they used bark thread or twine, and splints. The ribs consisted of narrow strips of ash, which were set about a foot apart along the bottom of the canoe, and having been turned up the sides, were secured under the rim. Each end of the canoe was fashioned alike, the two side pieces inclining towards each other until they united, and formed a sharp and vertical prow. In size, these canoes varied from twelve feet, with sufficient capacity to carry two men, to forty feet, with sufficient capacity for thirty. The one figured is about twenty-five feet in length, and its tonnage estimated at two tons, about half that of the bateau or river boat in use upon our inland waters before the construction of the canal. Birch bark retained its place without warping, but the elm and hickory bark canoes were exposed to this objection. After being used, they were drawn out of the water to dry. One of the chief advantages of these canoes, especially the birch bark, was their extreme lightness, which often became a matter of some moment, from the flood-wood and water-falls which obstructed the navigation of the inland rivers. Two men could easily transport these light vessels around these obstacles, and even from one river to another, when the portage was but a few miles.

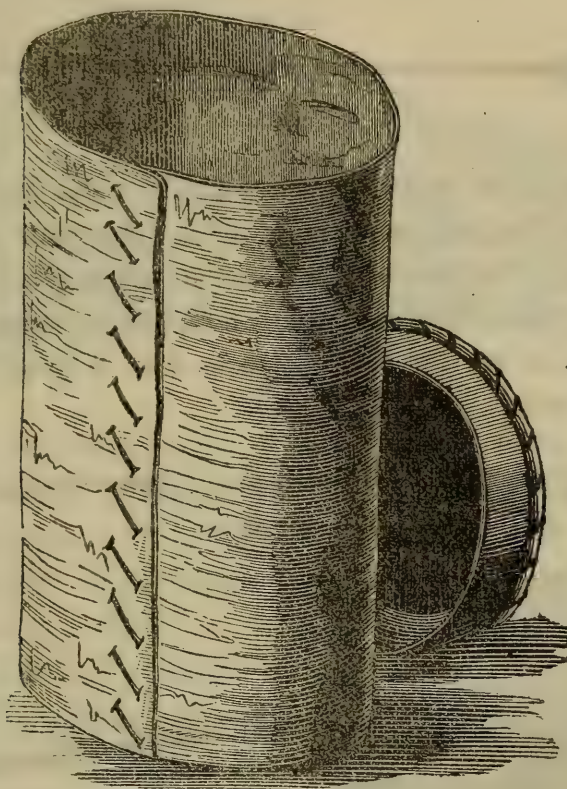
For short excursions one person usually paddled the canoe, standing up in the stern; if more than two, and on a long expedition, they were seated at equal distances upon each side alternately. In the fur trade these canoes were extensively used. They coasted lakes Erie and Ontario, and turning up the Oswego river into the Oneida lake, they went up Wood Creek, and from thence over the carrying place at Rome into the Mohawk, which they descended to Schenectady. The Iroquois thus possessed a connected water route from the Hudson to Lake Superior. Their canoes would usually carry about twelve hundred pounds of fur. At the periods of the invasions of the Iroquois territories by the French, large fleets of these canoes, sometimes numbering two



hundred, were formed for the conveyance of troops and provisions. With careful usage they would last several years.

Gā-snā Gā-ose-hā, OR BARK BARREL.

No. 44.



The bark barrel was used to store charred and dried shell corn, beans, fruit, cured venison and other meats, and a variety of other articles. When corn was buried in pits or caches, it was usually put in bark barrels of this description. During the war of 1812, when the British forces were expected over the frontier, the Senecas at Tonawanda, who had enlisted in the American army, buried their corn in bark barrels, after the ancient custom. These barrels were made of all sizes, from those of sufficient capacity to hold three bushels, to those large enough for a peck. They are made of black ash bark, the grain being run around the barrel. Such barrels were found in every family in ancient times, and among other purposes to which they were devoted, they were made repositories for articles of apparel and personal ornaments. With proper care they would outlast the longest life.

Several specimens of bark trays and bark sap tubs will be found in the collection. These vessels are always made of red elm bark.

Gā-no, or ARROW.

No. 69.

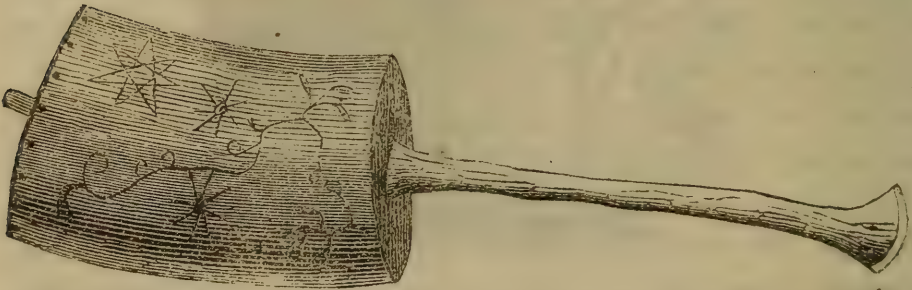


3 feet.

In ancient times arrows were pointed with horn or bone as well as with flint, and made even more dangerous missiles in the former cases. The above is a representation of an arrow of this description, which, with several others, was purchased of an Oneida on Grand river. It is about three feet in length and pointed with deer's horn.

O-no-gā Gus-dā-weh-sā, or HORN RATTLE.

No. 57.

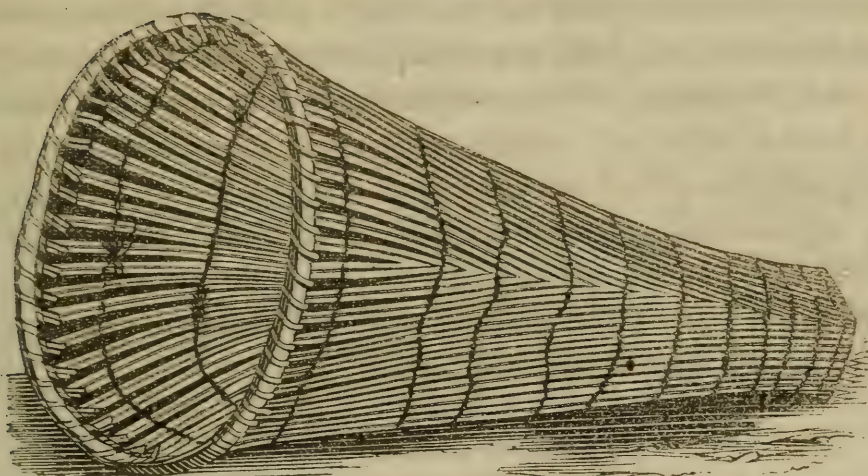


Various kinds of rattles were used by the Iroquois in their dances, of which, the turtle shell rattle was the most common; but occasionally, in later days, one is to be met with of this description. It was obtained of a Cayuga lad on Grand river.



## Yont-kā-do-quā, OR BASKET FISH NET.

No. 79



3 feet.

The basket net was made of splint in a conical form, about three feet in length, fifteen inches in diameter at the mouth, and six at the small end. In using it, the fisherman stood in the rapids of the creek or river, where the water rippled over the stony bottom, and with a stick or rod managed to direct the fish into the partly submerged basket, as they attempted to shoot down the rapid. When one was heard to flutter in the basket, it was at once raised from the water, and the fish was found secure within it. In those forest days, when fish abounded in every stream, it was an easy matter thus to capture them in large numbers.

Basket-making is preëminently an Indian art. It was the intention of the writer to enter into this subject somewhat minutely, and for that purpose a collection of splints in their various stages, from their condition when first taken from the tree, to those ready to be made into the most delicate baskets, was put up and arranged. But the unexpected length of this report will prevent any thing more than a passing notice. Black ash furnishes the only splint used by the Iroquois, and perhaps the same may be said of all other Indians. They choose a tree about a foot in diameter and free from limbs, after which they cut off a stick about six-feet in length. After removing the bark they pound the stick with some heavy implement to start the splints, which can thus be made to run off with the utmost regu-



larity and uniformity of thickness. This process is continued until the log is stripped down to the heart. These splints, which are about three inches wide and an eighth of an inch thick, are afterwards subdivided both ways until reduced to the required width and thickness. When resplit into thinner strips the splints have a white and smooth surface. If the baskets are to be variegated, the splints are dyed upon one side before they are woven, and are also moistened to make them pliable before they are used. The patient industry of the Indian female while engaged in this manual labor, and her skill and taste are alike exemplified in this interesting manufacture.

#### E-yose, or BLANKET.

No. 103 1-2. Plate 16.

In ancient times the Iroquois female costume consisted of moccasins, leggins, a deer skin skirt, and a deer or bear skin blanket dressed with the hair upon it. Since then they have adhered to the ancient costume with great fidelity so far as the articles of apparel are concerned, although they have changed the materials of which they were made. They still wear the moccasin, the leggin, the skirt and the blanket as a part of their ordinary dress; but the deer skin has been laid aside for the broadcloth and the woolen; and the porcupine quill in a great measure for the bead. We can yet discover in the broadcloth blanket, however tastefully embroidered or ribboned, the legitimate descendant of the ancient deer skin blanket. As now worn by the Indian female, the blanket is a very graceful and becoming article of apparel. It is either passed over the head and falls down around the person in natural folds, or rests upon the shoulders and is gathered like a shawl. The one shown in the plate is of the latter description. It is bordered with ribbon, the colors of which are tastefully combined, and also with beadwork, which will be more fully appreciated from the plate than from any description.

#### Gā-ka-ah, or SKIRT.

No. 101. Plate 17.

This is without question the finest specimen of Indian beadwork ever exhibited. Next to the article itself the plate will

furnish the best description. It was made by Miss Caroline G. Parker (*Gā-hā-no*), a Seneca Indian girl, now being educated in the State Normal School, to whose finished taste, and patient industry the State is indebted for most of the many beautiful specimens of beadwork embroidery now in the Indian collection.

In doing this work, the eye and the taste are the chief reliances, as they use no patterns except as they may have seen them in the works of others. In combining colors certain general rules, the result of experience and observation, are followed, but beyond them each one pursued her own fancy. They never seek for strong contrasts, but break the force of it by interposing white, that the colors may blend harmoniously. Thus light blue and pink beads, with white beads between them, is a favorable combination; dark blue and yellow, with white between, is another; red and light blue, with white between, is another; and light purple and dark purple, with white between, is a fourth. Others might be added were it necessary. If this beadwork is critically examined it will be found that these general rules are strictly observed; and in so far beadwork embroidery may be called a systematic art. The art of flowering, as they term it, is the most difficult part of beadwork, as it requires an accurate knowledge of the appearance of the flower, and the structure and condition of the plant at the stage in which it is represented. These imitations are frequently made with great delicacy, of which a very favorable exhibition may be seen in the plate, in the flower introduced at the angle of the skirt.

#### Gā-yā-ah, OR SACHEL.

No. 24. Plate 18.

This beautiful article is also of Seneca manufacture. Upon the lowest part of the front side (fig. 1) there is an ingenious imitation of a rose bush, with its flowers at different stages of maturity, from the one just opening its bud, to the full blown rose. The success of the imitation, considering the nature of the materials, and the artist, is quite commendable. It is easy to recognize the opening rose in the bud at the left, which, with its envelope and stem, is very accurately delineated. In flowering,



dark green beads are used for the stalk of the shrub, and glass beads of various colors and tints, for the flowers.

On the reverse side of the Satchel are two stars, which as specimens of fancy beadwork are tastefully and ingeniously made. This is not an original Indian article, but a naturalized invention.

Yā-wā-o-dā-quā, OR PIN CUSHION.

Plate 19.

The plate is intended merely as a further illustration of the general character of bead work embroidery. It is of Seneca manufacture and requires no description beyond the plate itself.

Gā-nó-sote, OR BARK HOUSE.

No. 114. Plate 20.

The bark house of the Iroquois has long since given place to a more substantial structure; but occasionally in some secluded corner a *Gā-nó-sote*, may yet be seen, constructed by some one whose age or fondness for the ancient mode of life led him to prefer the light, but convenient lodge of his forefathers. The single *Gā-nó-sote* was usually about twenty feet by fifteen upon the ground, and from ten to twenty feet high. The frame consisted of upright poles firmly set in the ground, usually five upon the sides and four at the ends, including those at the corners. Upon the forks of these poles, about ten feet from the ground, cross poles were secured horizontally, to which the rafters, also poles, but more numerous and slender, were adjusted. The rafters were strengthened with transverse poles, and the whole was usually so arranged as to form an arching roof. After the frame was thus completed, it was sided up and shingled with black ash bark, the rough side out. The bark was flattened and dried, and then split in the form of boards. To hold these bark boards firmly in their places another set of poles, corresponding with those in the frame, were placed on the outside, and by means of splint and bark rope fastenings the boards were secured horizontally between them. It usually required four lengths of boards, and four courses from the ground to the rafters to cover a side, as they were lapped at the ends, as well as clapboarded; and also in the same proportions for the ends. In like manner the roof was cov-



ered with bark boards, smaller in size, with the rough side out, and the grain running up and down; the boards being stitched through and through with fastenings, and thus held between the frames of poles, as on the sides. In the centre of the roof was an opening for the smoke, the fire being upon the ground in the centre of the house, and the smoke ascending without the guidance of a chimney. At the two ends of the house were doors, either of bark hung upon hinges of wood, or of deer or bear skin suspended before the opening; and however long the house, or whatever the number of fires, these were the only entrances. Over one of these doors was usually cut or painted the tribal device of the head of the family. Within upon the two sides were arranged wide seats, also of bark boards, about two feet from the ground, well supported underneath, and reaching the entire length of the house. Upon these they spread their mats of skins, and also their blankets, using them as seats by day and couches by night. Similar berths were constructed on each side about five feet above these and secured to the frame of the house, thus furnishing accommodations for the family. An interior view of the house is given in the plate. Upon cross poles near the roof was hung in bunches, braided together by the husks, the winter supply of corn. Charred and dried corn, and beans were generally stowed in bark barrels, and laid away in corners. Their implements for the chase, weapons, articles of apparel, and miscellaneous notions were stowed away, and hung up, wherever an unoccupied corner was discovered. A house of this description would accommodate a family of eight, with the limited wants of the Indian, and afford shelter for their necessary stores, making a not uncomfortable residence.

The Iroquois resided in permanent villages. About the period of the formation of the League, when they were exposed to the inroads of hostile nations, their villages were compact and stockaded. Having run a trench several feet deep around five or ten acres of land, and thrown up the ground upon the inside, they set a continuous row of stakes or palisades in this bank of earth,

fixing them at such an angle that they inclined over the trench.<sup>1</sup> Sometimes a village was surrounded by a double or even treble row of palisades. Within this enclosure they constructed their bark houses, which were very large and designed for several families, and in them secured their stores. Around it was the village field, consisting oftentimes of several hundred acres of cultivated land, which was subdivided into planting lots; those belonging to different families being bounded by uncultivated ridges.

But at the commencement of the seventeenth century, when their power had become consolidated, and most of the adjacent nations had been brought under subjection, the necessity of stockading their villages in a measure ceased, and with it the practice. At the period of the discovery of the inland Iroquois, about the year 1640, few, if any of the villages of the Senecas, Cayugas, or Onondagas were surrounded with palisades; but the Oneidas and Mohawks continued to stockade their villages for many years afterwards in consequence of the inroads of the French. From being compact, their villages afterwards came to be scattered over a large area, and their houses were planted, like the trees of the forest, at irregular intervals. No attempt in the modern village was made at a street, or at an arrangement of their houses in a row; two houses seldom fronting the same line. They are merely grouped together sufficiently near for a neighborhood.

As their villages at an early day were reckoned by the number of houses, it is important to notice the difference between the bark house of the ancient and of the modern period, to arrive at any estimation of the number of inhabitants in former times. When the village was scattered over a large area, the houses were single, and usually designed for one family; but when compact, as in early times, they were very large, and subdivided so as to accommodate a number of families. The long house was often over an hundred feet in length, by about sixteen in width,

1. Herein is doubtless the origin of many if not all of the Trench Enclosures which are found in various parts of the State. Not all of them necessarily made by the Iroquois, but by them and the nations who preceded them in the occupancy of New-York.



with partitions at intervals of about ten or twelve feet, or two lengths of the body. Each apartment was in many respects a separate house, accommodating two families, one upon each side of the fire. Sometimes there was a fire in every apartment, but more frequently for every other partition, so that one fire would answer for four families. Not unfrequently one of these houses contained from ten to twenty families, all bound together by the nearer ties of relationship, and constituting in effect one family. They carried the principle of "living in common" to its full extent. Whatever was taken in the chase, or raised in the fields, or gathered in its natural state by any member of the united families, enured to the benefit of all, for their stores of every description were common. They had regular hours for cooking through the whole establishment, and whatever was prepared was free to all. After the morning repast the Iroquois had no regular meal, but they satisfied their appetites whenever it was convenient. As they used no tables in ancient times they took their food separately, and whenever it could be done with the least trouble, the males first, and the females afterwards. There were no side doors to the long house, and as a necessary consequence there was a species of hall or avenue through the house from end to end. In constructing one of these houses, spaces were left at intervals through it for store rooms, which were open to those who were contiguous. Other peculiarities of these patriarchal households of the Iroquois might be pointed out; but sufficient has been said to give a general idea of both the single and the long house of our primitive inhabitants.

A Mr. Greenhalgh, in 1677, visited the Seneca village of *Dā-yo-de-hok-to*, signifying a "bended creek," situated upon a bend of the Honeoye outlet west of Mendon, in the county of Monroe. Under the name of "Tiotohatton," he thus speaks of it:—(Doc. Hist., N. Y., vol. 1, p. 13) "Tiotohatton lies on the brink or edge of a hill; has not much cleared ground; is near the river Tiotohatton, which signifies bending. It lies to the westward of Canagorah, about thirty miles, containing about 120 houses, being the largest of all we saw, (the ordinary being from fifty to sixty feet long,) with from twelve to thirteen fires in one house. They have good store of corn growing about a mile to the northward



of the town." He further states (ib. 12, 13) that Canagorah contained 150 houses, Onondaga 140, and Oneida 100. It is not improbable that the largest of the Iroquois villages in ancient times, or about the period of their discovery, contained from two to three thousand inhabitants.

It is difficult to form a correct estimate of the total number of the Iroquois at any particular period, the opinions of those, having the best opportunity of judging, have been so various. They have been rated from ten, to seventy thousand. An opinion may perhaps be indulged, without giving the statistics upon which it is founded. The period of their greatest prosperity, and of their highest military supremacy was about the year 1650; and their total population at that period may be safely placed at 25,000. A higher estimate would be better supported by such data as the case affords, than a lesser one; although the impression of later writers seems to be the contrary. An approximation to the relative strength of the several nations of the League upon this basis may be made by the following apportionment: To the Senecas 10,000; to the Cayugas 3,000; to the Onondagas 4,000; to the Oneidas 3,000; and to the Mohawks 5,000. A century later or about 1750, their total population was probably about half this number, the Mohawks having wasted away the most rapidly.

To return from this digression to the bark house from which it proceeded, it is proper to observe that among the articles furnished is the model of the original *Gā-no-sote* of the Iroquois, some six feet by four, in its ground plan, and made as large as it could be conveniently transported. The model shows very perfectly the mechanism of the bark house throughout; but it is defective in its proportions. It was designed for two fires, or four families, and therefore should be either longer or narrower, and not as high. With this criticism in mind the plate gives a faithful impression of the primitive house of the Iroquois.

The great length of this report forbids those suggestions upon the further enlargement of the Indian collection, and those reflections upon its importance, which the subject is calculated to inspire. With a fair portion of the fabrics, implements

and utensils of the most gifted race of Indian lineage within the limits of our Republic, as the nucleus of a general Indian collection, the way is fairly opened by the State for successfully accomplishing an enterprise, which is both full of historical interest and worthy of its enlarged munificence. It is greatly to be hoped that the time is not distant when one collection, at least, may exist in the country, which is sufficiently general, and sufficiently minute, to illustrate the social life and the artizan intellect of the whole Indian family.

There is also a collateral consideration which cannot be overlooked. In the fabrics of the modern Iroquois there is much to inspire confidence in their teachableness in the useful arts. When their minds are unfolded by education, and their attention is attracted by habit to agricultural pursuits, as has become the case to some extent, there is great promise that a portion, at least, of this gifted race will be reclaimed, and raised, eventually, to a citizenship among ourselves. In that great work, the people of the State have a part to perform. It would be a grateful spectacle yet to behold the children of our primeval forests cultivating the fields over which their fathers roamed in sylvan independence; and worshiping that God, in the fullness of light, and knowledge, whom, in the Great Spirit, however imperfect their conceptions, they most distinctly discerned.

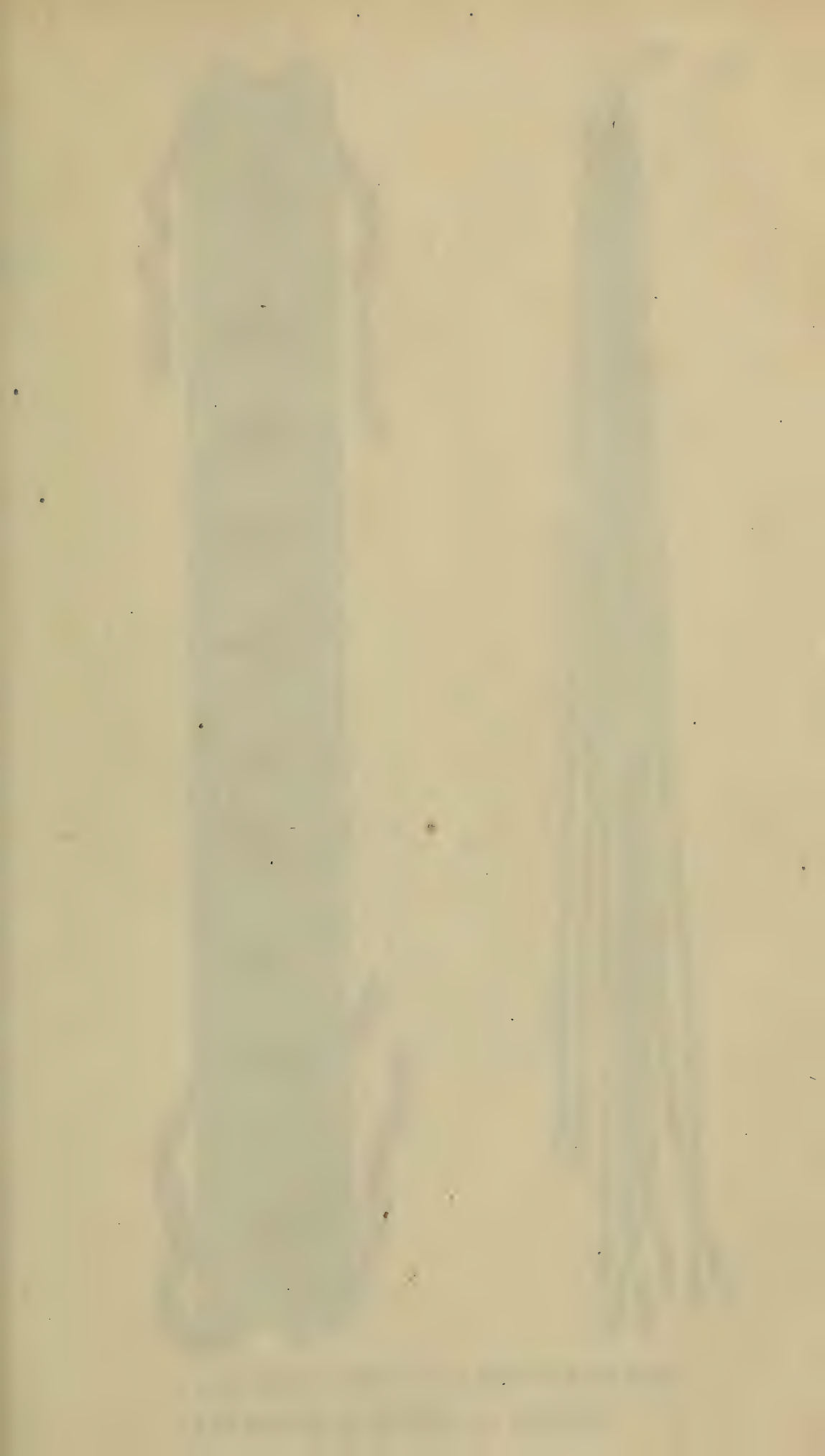
All which is respectfully submitted.

LEWIS H. MORGAN.

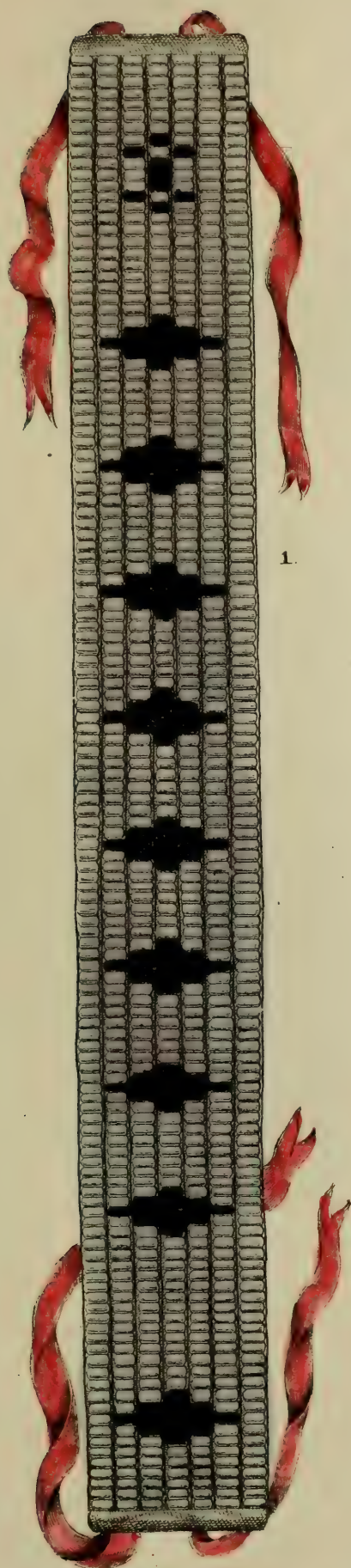
*Rochester, January 22, 1851.*











1.



2.

1. GÄ-SWEH-TÄ OTE-KO-Ä OR BELT OF WAMPUM.  
2. OTE-KO-Ä OR STRING OF WAMPUM



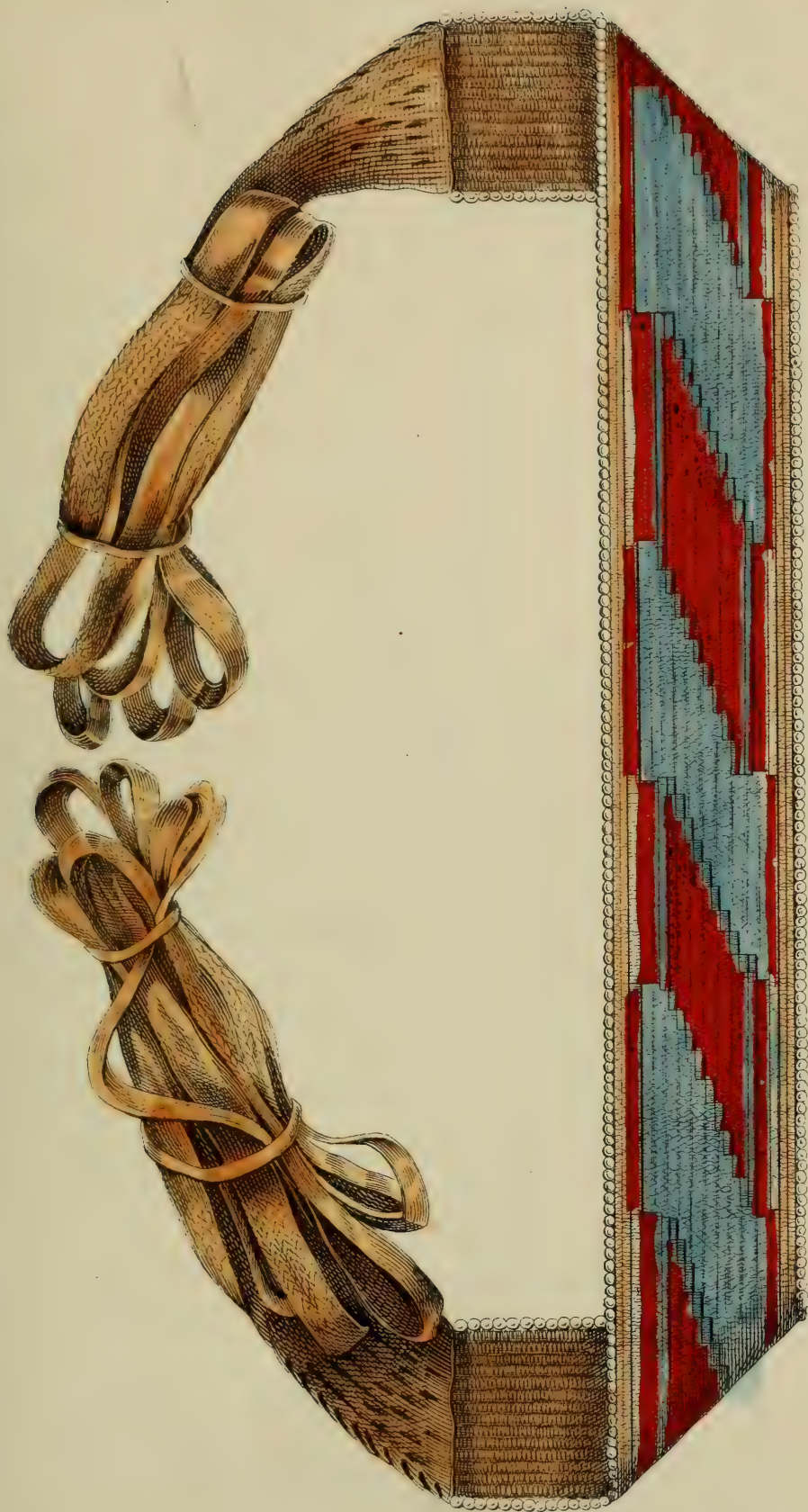




GÄ-SWÄ-HOS-HÄ OR BABY FRAME BELT

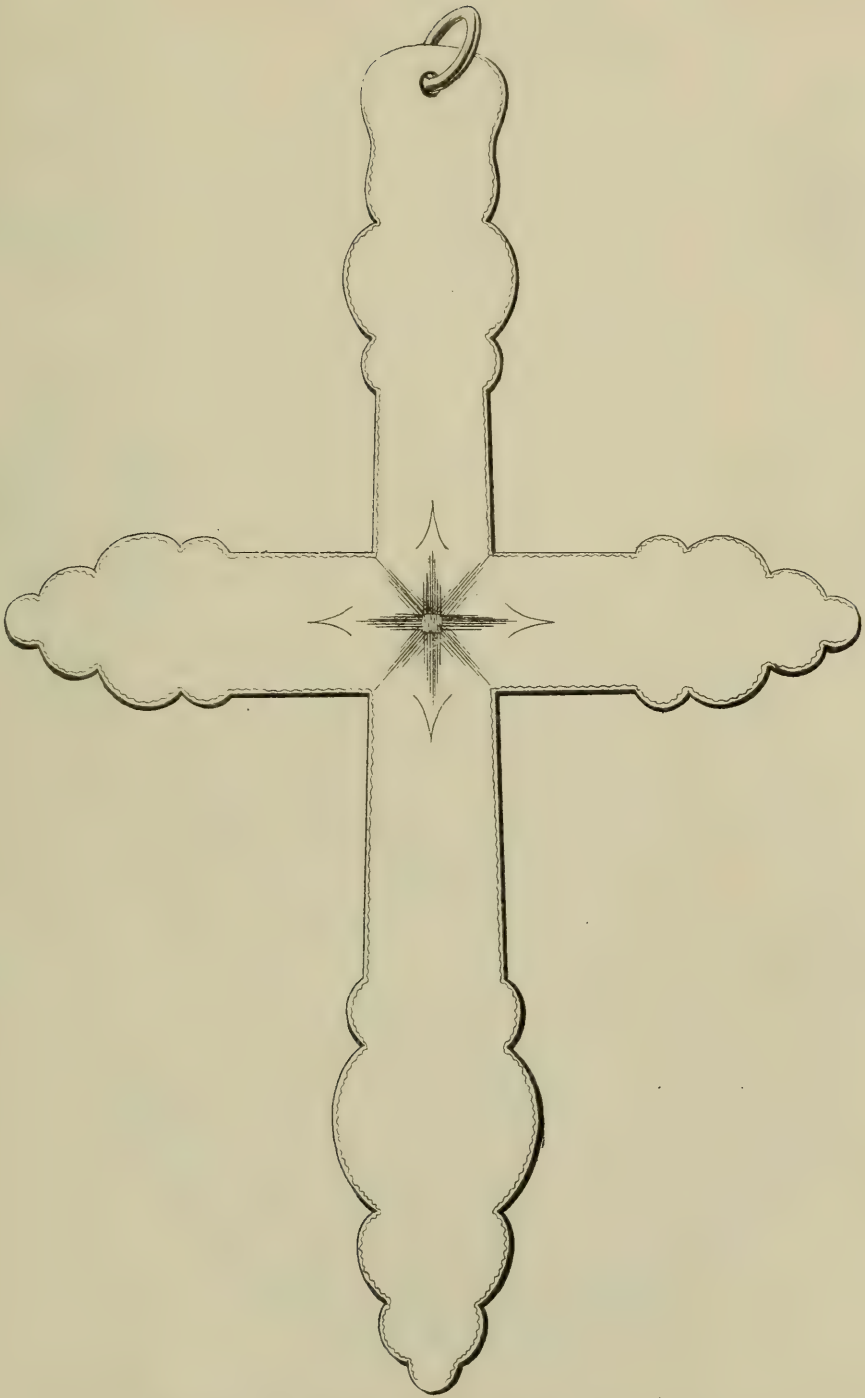






O-Ä-TA-OSE-KÄ OR MOOSE HAIR BURDEN STRAP.



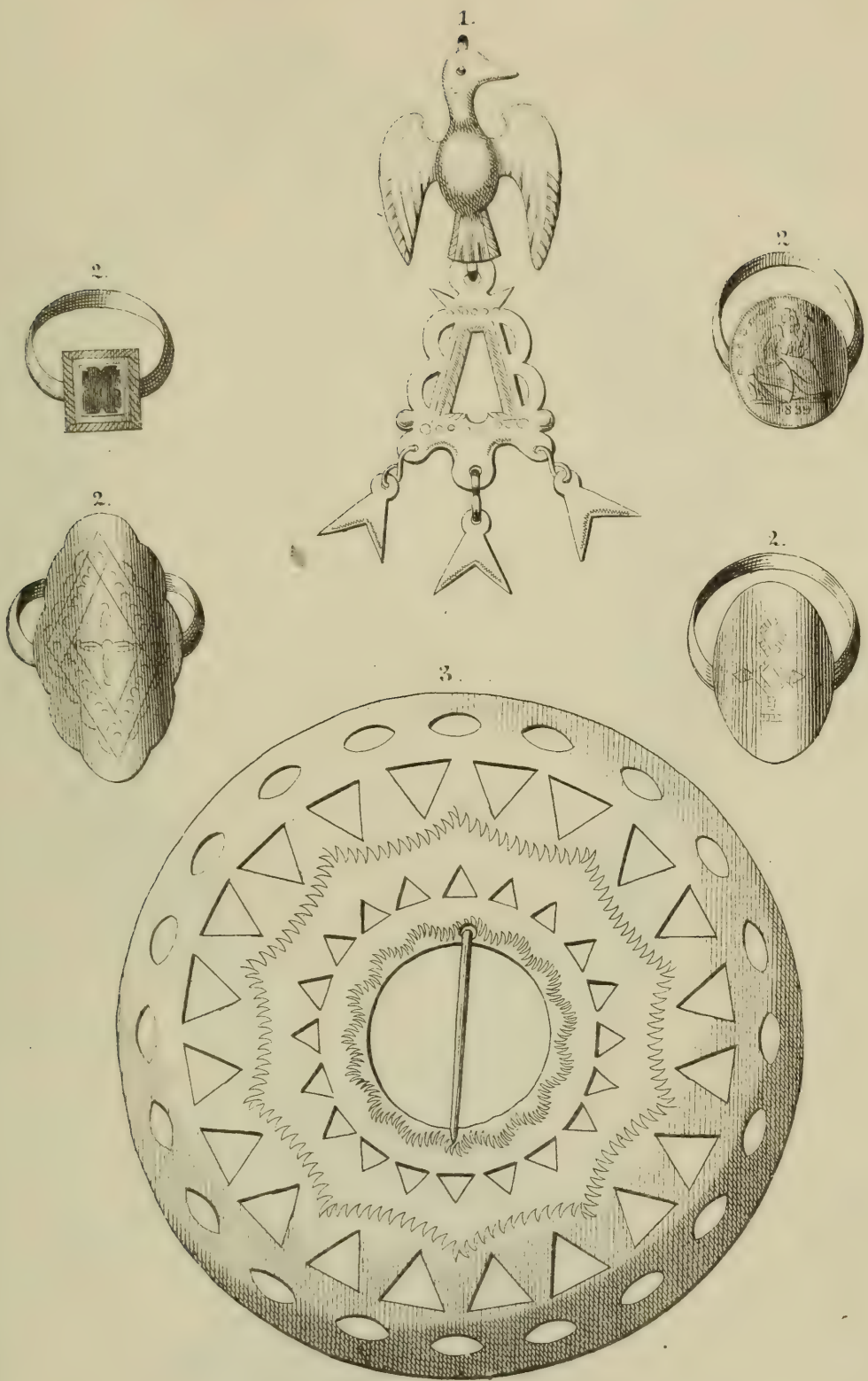


DÄ-GÄ-YÄ-SONT OR SILVER CROSS.

Ten Inches long.



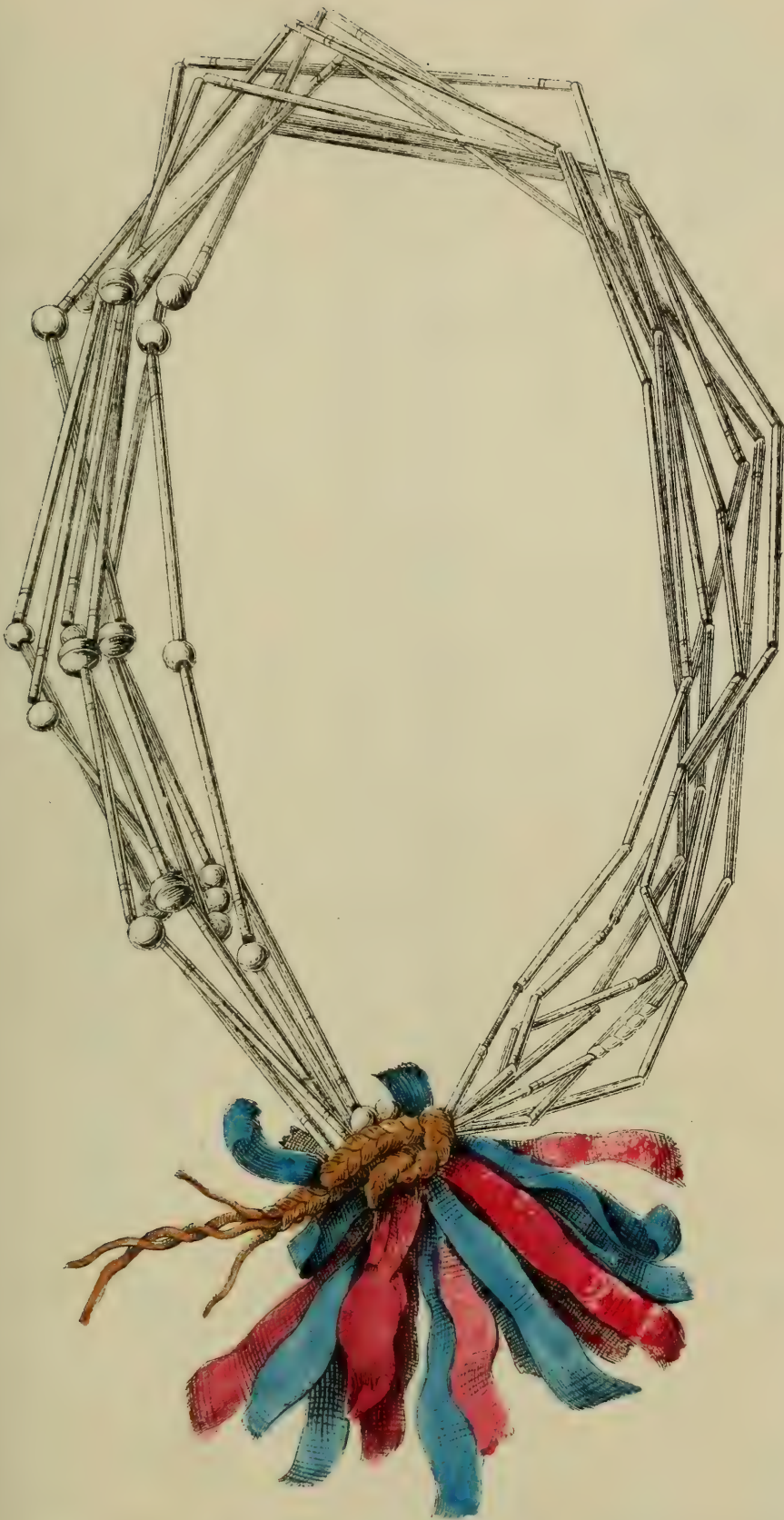




1. AH-WAS-HÄ OR SILVER EAR RING  
 2. AH-NE-A-HUS-HÄ SILVER FINGER RINGS  
 3. AN-NE-ÄS-GÄ OR SILVER BROACH







OUT WIS TA NE UN DÄ QUÄ OR SILVER BEADS





1. GÄ-TE-AS-HÄ OR GLASS BEADS.

2. O-WIS-TÄ-NO-O O-STÄ-O-QUÄ OR SILVER BEADS.







GÄ-TE-ÄS-HÄ GÄ-A-O-TÄ-GES  
OR  
GRASS SHOULDER ORNAMENT.







GÄ-KÄ-AH OR DEER SKIN KILT





GISE-HÄ OR DEER SKIN LEGGIN.



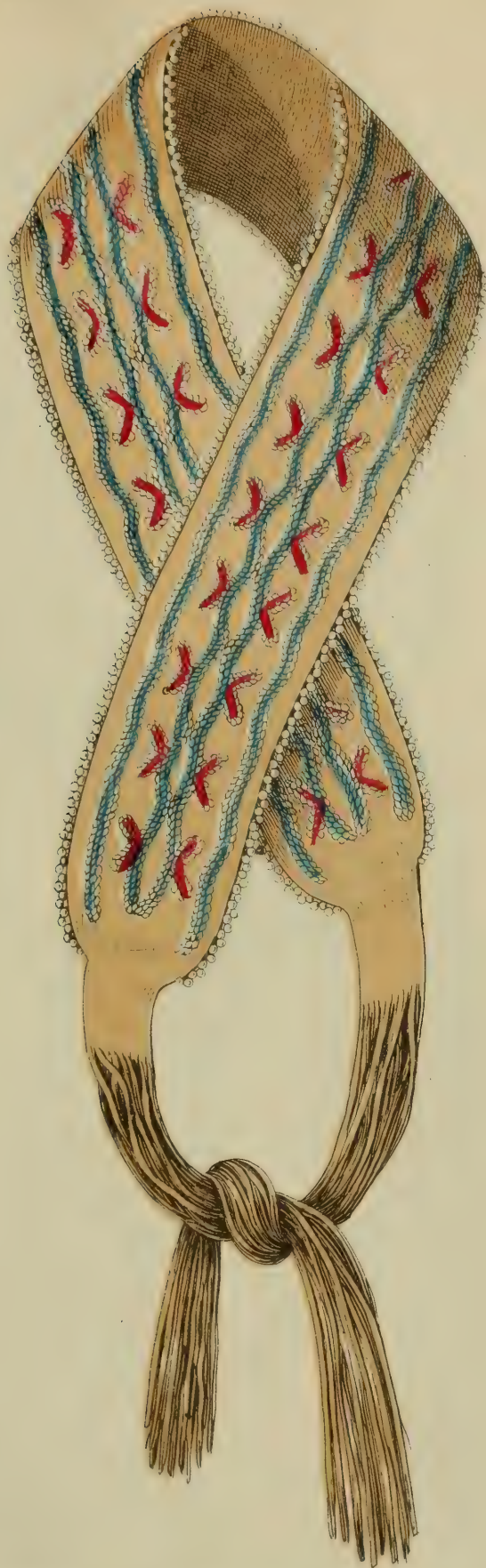




AH-TÄ-QUÄ-O-WEH OR MOCCASON  
Embroidered with porcupine quills







YUNT-KA-TO-DĀ-TĀ OR DEER SKIN SHOULDER BELT

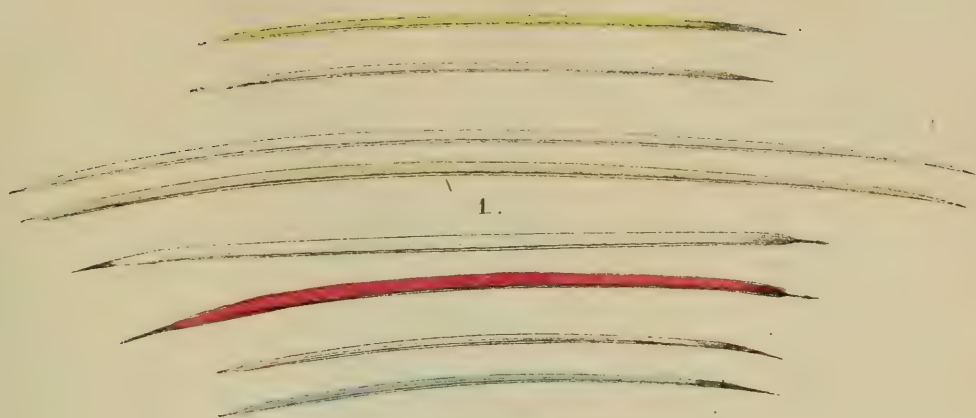




DA-YUNT-WA-HOS-TÄ OR DEER SKIN WAIST BELT



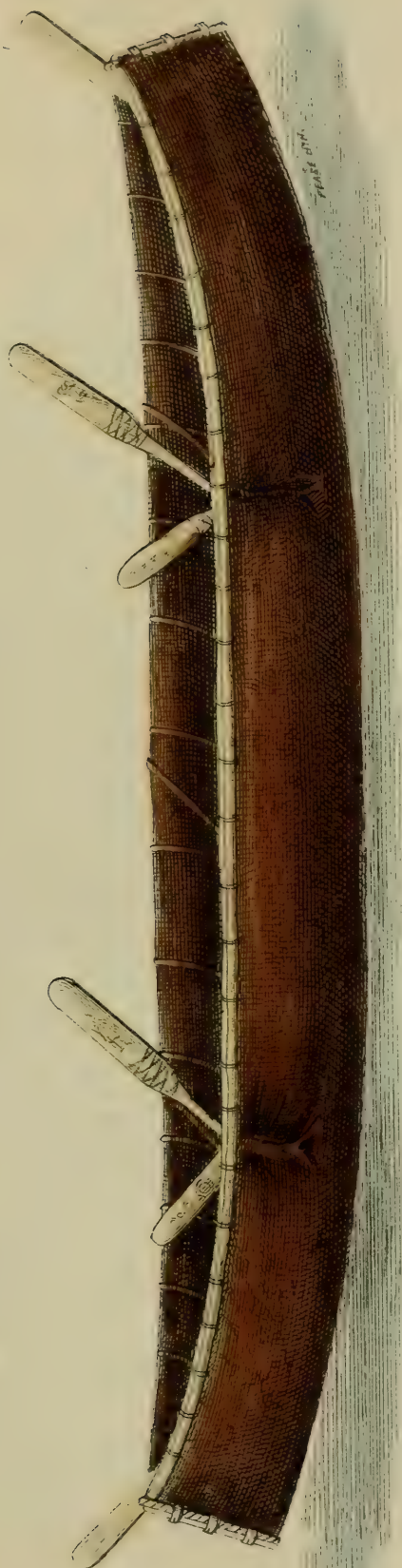




1. O-HA-DA OR PORCUPINE QUILL  
2. GÄ-NO-SÄ OR CONCH SHELL BREAST PLATE







GÁ-Ó-WO  
OR  
BARK CANOE.





E-YOSE OR BLANKET







GÄ-KÄ-AH OR SKIRT

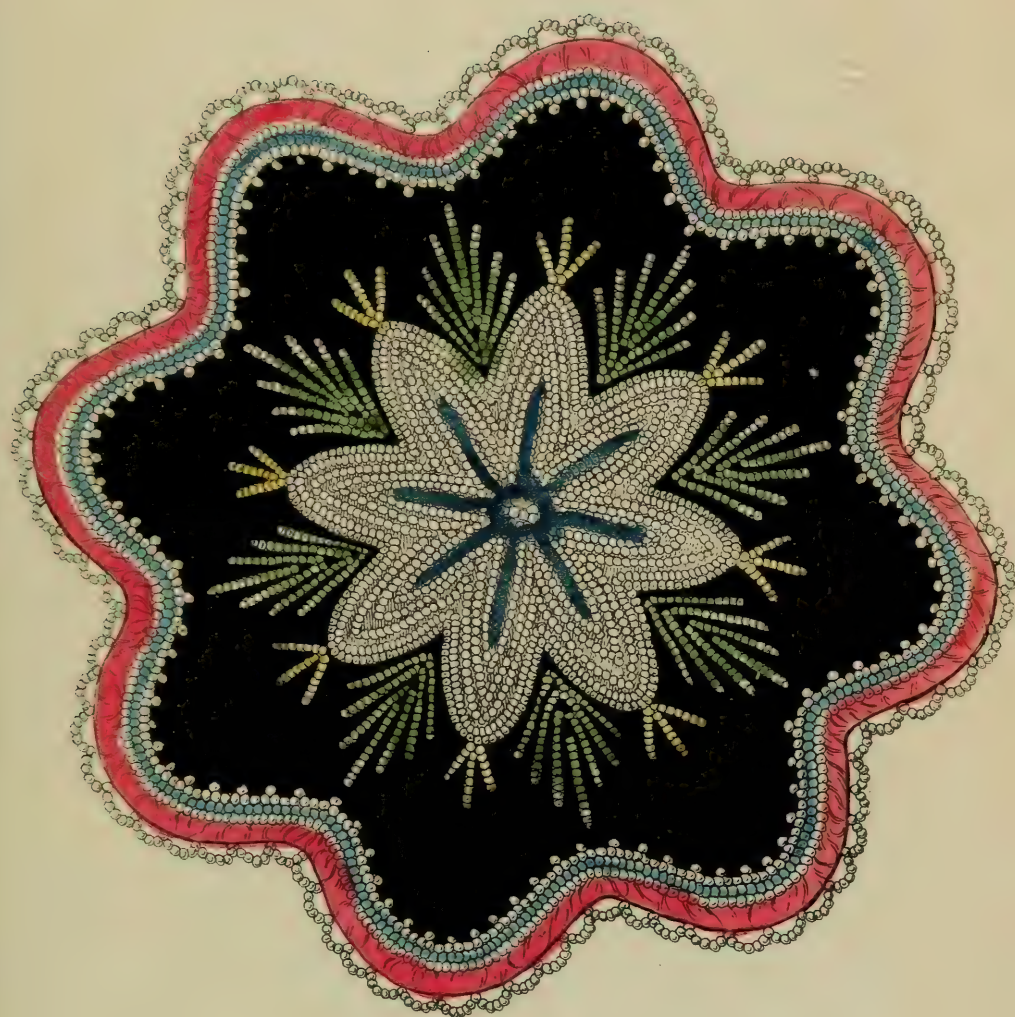






GÄ-YÄ-AH . OR SATCHEL

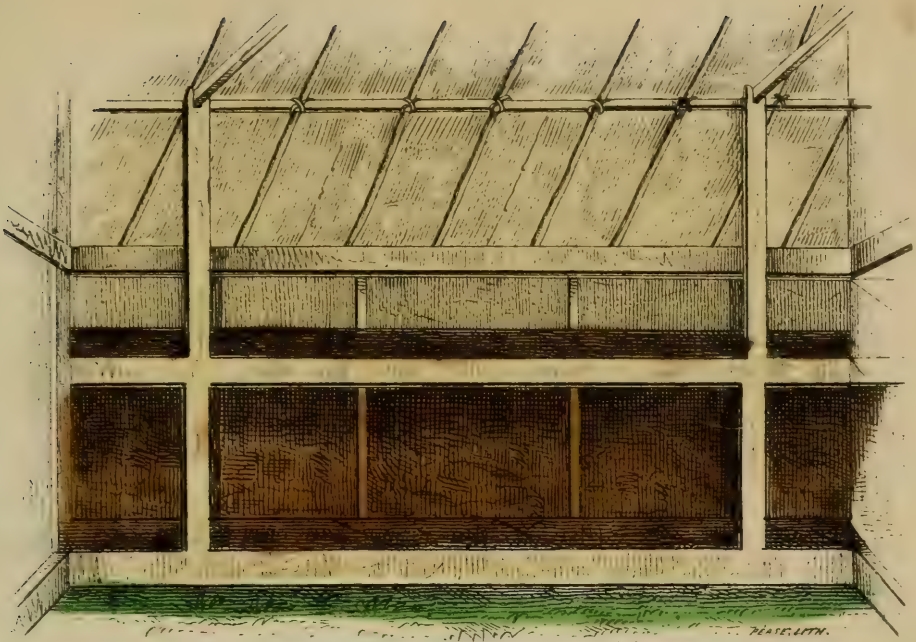




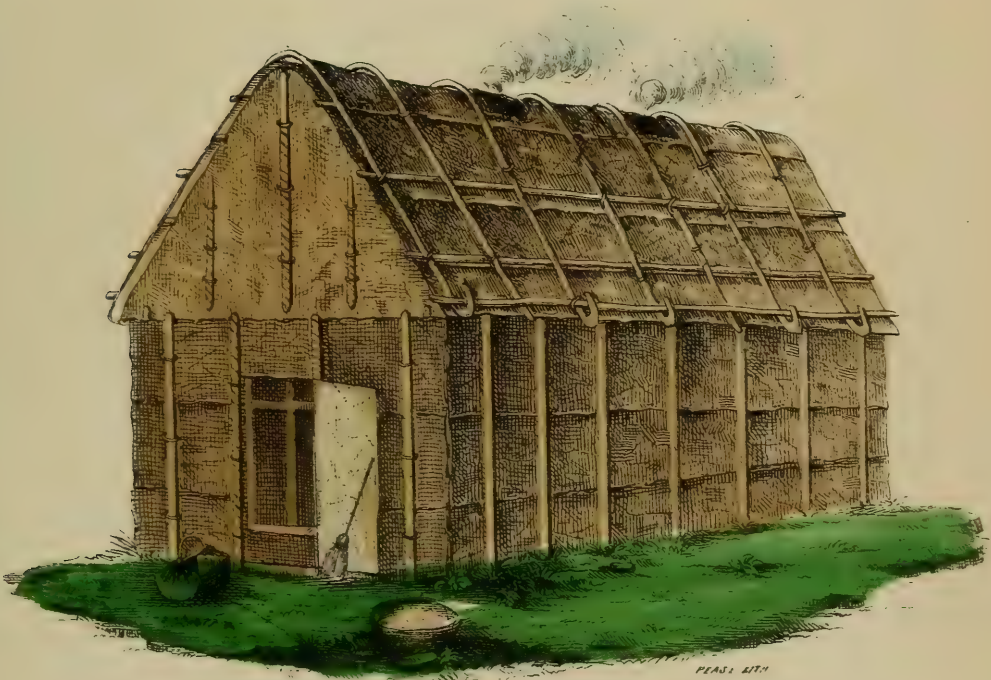
YÄ-WÄ-O-DÄ-QUÄ OR PIN CUSHION







Interior View of  
BARK HOUSE.



GÄ-NÓ-SOTE  
or  
BARK HOUSE.














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